HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

Digitized by the Internet Archive
in 2016

https://archive.org/details/journalofoklahom5511okla

SCIENCES LIBRARY
SITY OF MARYLAND
BALTIMORE
26 '62
AY 8 '62
CIRCULATES AFTER FEB 23 1962
STACKS

The JOURNAL
of the Oklahoma State Medical Association
Volume 55
Number 1

1962... Legislative Target Year Page 1

when urinary tract infections present a therapeutic challenge...

CHLOROMYCETIN®

(chloramphenicol, Parke-Davis)

Often recurrent...often resistant to treatment, urinary tract infections are among the most frequent and troublesome types of infections seen in clinical practice.[1,2] In such infections, successful therapy is usually dependent on identification and susceptibility testing of invading organisms, administration of appropriate antibacterial agents, and correction of obstruction or other underlying pathology.

Of these agents, one author reports: "Chloramphenicol still has the widest and most effective activity range against infections of the urinary tract. It is particularly useful against the coliform group, certain Proteus species, the micrococci and the enterococci."[1] CHLOROMYCETIN is of particular value in the management of urinary tract infections caused by *Escherichia coli* and *Aerobacter aerogenes*.[3] In addition to these clinical findings, the wide antibacterial range of CHLOROMYCETIN continues to be confirmed by recent *in vitro* studies.[4-6]

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections, such as colds, influenza, or viral infections of the throat, or as a prophylactic agent. *Precautions:* It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

References: (1) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* **10**: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* **11**:392, 1960.

68961

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit 32, Michigan

The JOURNAL of the Oklahoma State Medical Association

JANUARY 1962
Vol. 55/No. 1

EDITORIAL BOARD

BEN H. NICHOLSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

C. B. DAWSON, M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

CLINTON GALLAHER, M.D.
President

J. HOYLE CARLOCK, M.D.
President-Elect

PETER E. RUSSO, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DICK GRAHAM
Business Manager

DON BLAIR
Associate Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

1962—Legislative Target Year! 1
Poliomyelitis Vaccines 1
Children's Teeth 2
President's Page 3

scientific

Intratemporal Facial Nerve Palsy, *Rafael Rigual, M.D. and Richard Cummings, M.D.* 4
Salmonella Meningitis, *Harris D. Riley, Jr., M.D. and Max Deardorff, M.D.* 10
A Review: Chorea, A Symptom Complex, *Jimmy L. Simon, M.D.* 19
Carcinoma of the Maxillary Antrum, *John L. Ritan, M.D.* 23
Congenital Diaphragmatic Hernia, *Hadi Malek, M.D. and Horace Chaitin, M.D.* 28
Heart Page, *Francis W. Pruitt, M.D., F.A.C.P.* . . . 31

news

A "New Look" Annual Meeting 32
County Leaders Asked to Spearhead CD Program . . 34
OSMA Sponsors AAPS Essay Contest 35
College of Surgeons Slates Clinical Meeting in Tulsa . 35
AMA Reorganizes AMEF 35
GP's to Meet in Tulsa 36
Alumni Association Meets, Names Officers 36
Carl Puckett Memorial Lecture Planned 36
1962 Dues 37
Regional Postgraduate Courses Are Popularly Received 37
Next Month—Heart Issue 37
Miscellaneous Advertisements 38
Letter to the Editor 38
Index to Advertisers lvi
Auxiliary lvii
The Last Word lviii

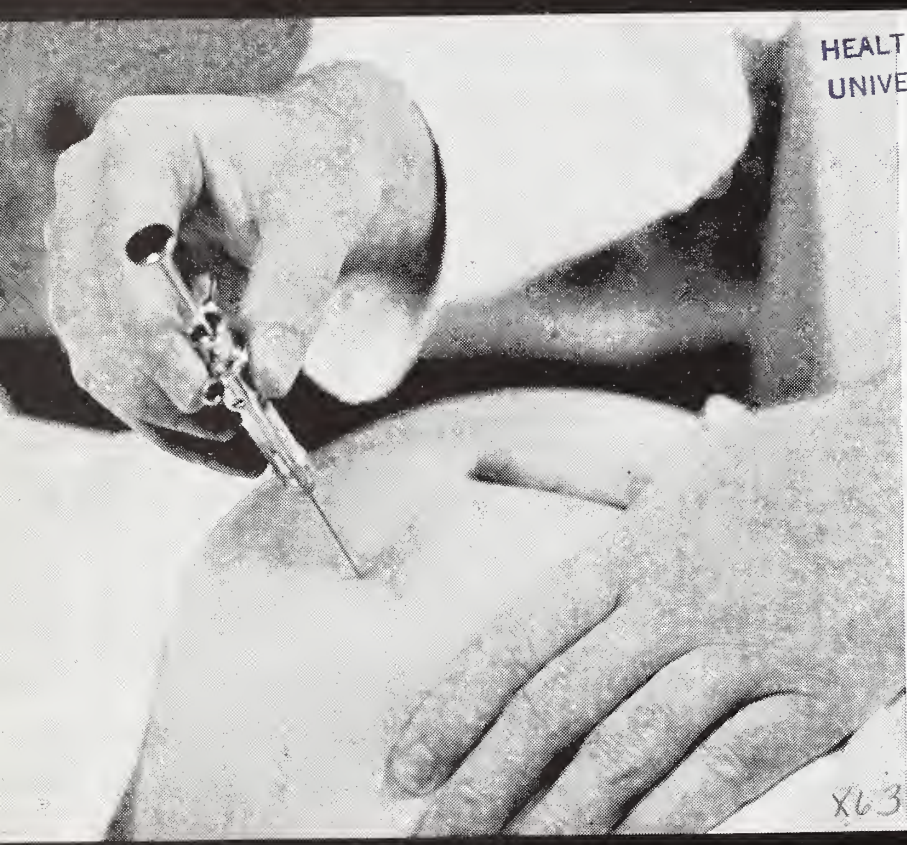
In oral penicillin therapy

COMPOCILLIN-VK

offers the speed, the certainty,

the effectiveness

of this...



HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

with the safety

and the convenience

of this...

X63-2992

1962--Legislative Target Year!

AMERICAN MEDICINE perches nervously in the legislative bullseye of the 87th Congress.

A momentous decision is in the offing on the so-called *King-Anderson Bill,* and all surface arguments aside, the outcome of this legislation will profoundly affect the *future course* of the world's finest health care system!

1962 is the showdown year on a series of proposals to add health care benefits to the social security mechanism. If the forthcoming proposal is approved, taxpayers will be signing a blank check for the provision of medical, hospital and nursing home care to some 14 million social security recipients, regardless of whether the beneficiaries need or want the financial help or need or want the health care. Future expansion of the program is a certainty, for if the elderly are "given" health care regardless of need why are other age groups denied this "right"?

Last year's *King-Anderson Bill,* which was stopped in the House Ways and Means Committee, is expected to reach the floor of the House for a vote sometime this Spring. Conservative Congressmen have lost control of this committee, so the next battle—*the big one*—will probably be decided when each member of the House says "aye" or "nay."

THE ISSUE

The *Kerr-Mills Law* went into effect in October, 1960. In brief, it offers Federal funds to match state funds for the establishment of both indigent medical care programs and similar plans for those over 65 who are not on welfare rolls but need occasional help with health care costs. (Oklahoma is now spending about $20 million annually in Federal-state funds to implement Kerr-Mills.)

Health services are provided to the beneficiaries based upon established need, and the scope of the programs varies from state to state, controlled by a state agency in accordance with the needs of the state.

In contrast, the social security approach to the problem is the equivalent of firing a broadside at the whole aged population. Proponents of the *King-Anderson Bill* object to having a means test. To ask a man about to receive public money to show that he needs it is supposed to be an affront to his dignity and to make him a "second-class citizen."

Thus, the issue is not one of whether or not to help the elderly; it is a question of spending public funds with a purpose (Kerr-Mills) or indiscriminately (King-Anderson).

A YEAR TO REMEMBER

Defeating the 1962 version of the *King-Anderson Bill* will not be easy, since it is a top priority item in the Kennedy Administration's legislative program. Impartial observers figure that organized medicine and its allies have about a 50-50 chance!

Leaders of organized labor have openly stated that they will not be satisfied until all health services are federalized for everyone. *The King-Anderson Bill of 1962* is a giant step toward this regressive goal.

If the issue is stripped of its emotional smoke screen, and judged on its true merits, the majority of Americans *and their congressional representatives* will oppose it. If physicians fail to take the necessary leadership, the socialistic minority will prevail, and each of us must mark 1962 as the year we apathetically sold out the heritage of American Medicine! □

Tom C. Points, M.D., Legis. Com.

Poliomyelitis Vaccines

A statement of the Committee on the Control of Infectious Diseases—American Academy of Pediatrics.

THE RELEASE of Types 1 and 2 live attenuated oral polio vaccines with Type 3 still unavailable has prompted many questions from members regarding the advisability of their use.

The Academy does not recommend that these vaccines be used for routine immunization until all three of the oral vaccine types become available. Until this time, the con-

tinued use of the polyvalent Salk-type vaccine is recommended.

If used on individual patient basis, the live polio vaccine loses some of its advantage over the Salk-type vaccine. The only present recommendation for the use of the Type specific oral vaccine for mass immunization is during periods of epidemic poliomyelitis when the prevalent virus type is Type 1 or Type 2.

The reasons behind these recommendations that the oral vaccine be reserved for community wide immunization are:

1) Only by an intensive organized "all-out" effort can one hope to saturate a community and reach most of its inhabitants. Most paralytic polio now occurs in people who did not receive the Salk vaccine. Special efforts are needed to get the live vaccine to these groups in order to obtain maximum benefit from its use.

2) In a community which is experiencing an outbreak of epidemic poliomyelitis the "simultaneous saturation" technique offers the best opportunity to control the spread of the wild virus, through interference or replacement of the wild virus by the attenuated live virus and by rapid development of local immunity in the gastrointestinal tract. Similarly it is hoped that by massive community-wide vaccination other interfering enteric viruses as well as wild polio viruses can be virtually eliminated from the community.

3) By simultaneous saturation of the community the hypothetical possibility of enhanced virulence of the vaccine virus through multiple human passage is minimized.

4) Problems of packaging, refrigeration and shelf life and distribution make it expensive to vaccinate one child at a time with live virus and this approach loses the value of the community-wide program. Furthermore, the child should receive Salk-type vaccine including booster doses, until such a time as all three types of live attenuated vaccine become available.

Academy members are urged to take an active part if their community undertakes such a community-wide vaccination program with a live attenuated virus. In most areas, State and County Health Departments will have some organized approach for conducting such a program. If so, Academy members are urged to cooperate with the Public Health Authorities. When such leadership is not available, members of the Academy may wish to spearhead the program. Advice and *detailed* suggestions may be obtained from the Academy office by those wishing to initiate such a program.

Once again it should be emphasized that until the time comes when community-wide programs can be undertaken with all three types of live attenuated vaccines, Academy members are encouraged to use and promote the use of the polyvalent Salk-type vaccine as outlined in the Redbook and subsequent News Letters.

Children's Teeth

DENTAL CARIES continues to be a serious problem in the every day practice of pedodontics. In some areas of the country, over 22 per cent of the two year olds, and 52 per cent of the three year old children have been found in need of immediate dental care. Fluoridation of the public water supply today offers the most striking benefits, as in every locality where it has been installed the tooth decay rate has been reduced by 50 to 60 per cent. The topical application of stannous fluoride, elimination of eating between meals, the improvement of tooth brushing habits, and regular visits to the dentist are all methods where considerable evidence suggests great benefits can be obtained in preventing disease. The correction of dietary inadequacy and the reduction of freely fermentable carbohydrates are also among the important caries control measure.

Many irregularities in the occlusion should be diagnosed and treated *early* in the life of a child. The concept is no longer true that all malocclusion should be treated only after the eruption of all the permanent teeth. Proper guidance of these irregularities during the developing dentition period can often mean the difference between an esthetically satisfactory and normally functioning occlusion, and one which can only be corrected by major orthodontic treatment.

Extracted from a letter from James H. Simmons, D.D.S., President of the American Society of Dentistry for children to the President of the American Academy of Pediatrics

In the political scene, there's reported to be a refreshing shift in the national attitude—toward more conservatism in government. American heritage groups are springing up like wild flowers; taxpayers are beginning to cringe from the big-spending programs; college political clubs are more inclined to be conservative than liberal; old fashioned self-reliance seems to be recapturing some of its long-lost lustre!

What a paradox, then, that American Medicine is about to engage liberal forces in a death struggle over its future freedom—and the freedom of 14 million Americans who may have their health care regimented under the paternalistic umbrella of the social security mechanism.

The imminent threat of the King-Anderson Bill during the next Congress is an unfortunate reality. We must boldly face it with a tremendous individual and united effort—now is the time for physicians to muster all possible strength and make the voice of freedom heard loud and clear in Washington!

Oklahoma congressmen must be told that we are *for* the indigent old folks; that we are *for* the Kerr-Mills Law to ease their financial burdens; that we are *for* a rebirth of familial responsibility; that we are *for* a strong, solvent America—an America basically comprised of self-reliant people; an America with charity for all who *need* it!

American Medicine must not backslide at a time when the general political picture shows improvement! □

Clinton Gallaher M. D.
President

OSMA JOURNAL/scientific

Intratemporal Facial Nerve Palsy

RAFAEL RIGUAL, M.D.
RICHARD CUMMINGS, M.D.

Many different lesions of the temporal bone can cause a facial nerve paralysis. These causes and their differentiation will be discussed.

THE FACIAL NERVE has three functions. The most important is the control of facial expression. The other two functions are to provide taste to the anterior two-thirds of the tongue, and the parasympathetic control of the lacrimation and salivation.

Paralysis of this nerve is a tragedy to the patient and a distressing problem to the clinician.[1] This concerns the otolaryngologist when the palsy is caused from disease within the temporal bone.

Many different intratemporal diseases can cause facial nerve paralysis. The various causes and their management will be discussed.

SURGICAL ANATOMY

The facial nerve is paralyzed more often than any other motor nerve in the body.[2] This is because it has a long course through a narrow, bony canal, which makes it particularly vulnerable to injury of all types. The seventh nerve enters the internal auditory meatus along with the eighth nerve and the internal auditory artery. Near the lateral end of the internal auditory canal, the facial nerve enters a separate bony canal known as the fallopian canal. It then procedes a few millimeters laterally to where the geniculate ganglion is formed just above the basal turn of the cochlea.

At the geniculate ganglion, the greater superficial petrosal nerve is given off. The facial nerve then begins to curve backward, slightly laterally, and about 20° downward, to form the tympanic or horizontal portion of the nerve. The sharp turn as the nerve begins its tympanic course lies just medial and above the cochleariform process.

The tympanic or horizontal portion passes below and anterior to the lateral semicircular canal and just above the oval window. As it passes the posterior end of the lateral semicircular canal, it lies medial to the pyramidal eminence, where it gives off the stapedius nerve. At this point it turns downward and slightly laterally to form the vertical portion of the facial nerve.

The nerve then exits at the stylomastoid foramen. The chordi tympani nerve is given off in the midportion of the vertical or mastoid segment of the facial nerve. The tympanomastoid suture line corresponds approximately to the course of the vertical segment of the nerve. This landmark is most important, as the vertical segment is the part of the nerve most often accidentally damaged.

There are several points of special interest in the intratemporal anatomy of the facial

nerve. The wall of the fallopian canal in the horizontal portion is very thin and can easily be damaged. In fact, small dehiscences of the canal wall occur in about five per cent of cases and are considered a variation from normal.[3] The fallopian canal is completely filled with the facial nerve. Thus, any type of swelling within the canal will cause direct pressure on the nerve.

The stylomastoid foramen is on the lateral wall of the mastoid bone in young children. This makes the nerve vulnerable to injury by even the initial skin incision in young children.

There can be marked variation in the course of the facial nerve through the temporal bone.[4] One of the common variations is the extension of the facial nerve posterior and below the lateral semicircular canal before it turns downward in its vertical course. One case where the nerve passes below the oval window has been reported.[5]

While one must be aware of these variations, they are quite rare. In general, the course of the facial nerve is quite constant and it should not be injured in the ordinary surgical case.

DIAGNOSIS

Almost any disease of the temporal bone can cause paralysis of the facial nerve, and injury results in typical peripheral facial palsy. It is nearly always a flaccid type of paralysis, although rarely it can cause intermittent hemifacial spasms. All the facial muscles on the affected side of the face are involved in most instances. Intratemporal paralysis can be easily differentiated from central paralysis, which causes spastic paralysis and spares the upper half of the face.

The diagnosis of the site of injury is very important in the management of facial nerve palsies. Besides the facial palsy, there are smaller changes which vary according to the location of the injury.

A lesion in the petrous part of the temporal bone which does not involve the geniculate ganglion will cause decreased lacrimation and salivation but will not affect taste. This is because part of the taste fibers circumvent the petrous bone by reaching the pons via the greater superficial petrosal and fifth nerves.

Injury to the geniculate ganglion will cause decreased lacrimation and salivation and loss of taste over the anterior two-thirds of the tongue and from the soft palate on the same side.

A lesion to the tympanic portion of the facial nerve will cause loss of taste over the anterior two-thirds of the tongue and the soft palate. Salivation will be impaired but lacrimation will be normal. These changes are not serious and the patient may not even be aware of them. Any lesion of the facial nerve from the brain stem to the stapedius nerve will cause paralysis or weakness of the stapedius muscle. In this case, the patient may have hyperacusis and increased sensitivity to deep notes. Many papers, even quite recently, state that paralysis of the stapedius will cause deafness. Cawthorne has pointed out that this is not true.[6]

A lesion of the vertical segment of the nerve will affect salivation and taste if it is above the exit of the chordi tympani nerve. If it is below the chordi tympani, taste and salivation will be normal.

PATHOLOGIC PHYSIOLOGY

The facial nerve reacts to injury in the same way as any peripheral nerve. It will undergo degeneration and regeneration in the same manner except it will be slower because of the narrow fallopian canal. Paralysis of the facial nerve as the result of trauma may be of: (1) a benign type of paralysis caused by a transient blockage of

---

Rafael Rigual, M.D., graduated from the University of Oklahoma School of Medicine in 1950 where he is now Assistant Professor in the Department of Otolaryngology.

Doctor Rigual holds memberships in the Academy of Otolaryngology and Ophthalmology, the American Society of Facial Plastic Surgery and the Pan American Association of Otorhinolaryngology and Bronchoesophagology.

A graduate of the University of Kansas School of Medicine, Richard J. Cummings, M.D., is Chief Resident in Otolaryngology at the University of Oklahoma Medical Center.

nerve impulses but with no permanent damage to the nerve itself; (2) a degenerative type caused by injury so severe as to result in necrosis of the axons.

In the second instance, the nerve will undergo Wallerian degenerations, causing disintegration of the nerve distal to the injury and leaving only the neurilemma tube intact. It takes from 17 to 20 days of Wallerian degeneration to occur.[7]

If the neurilemma is intact, regeneration may then occur. This is accomplished by the downgrowth of neurofibrils from the proximal segment of the nerve. This rate of growth is about two to three mm. a day under optimum conditions. The regenerating nerve can cross an interrupted neurilemma tube if there is some sort of supporting structure present to guide the growth.

ETIOLOGY

There are many different causes of intratemporal facial nerve paralysis. These can be best classified into four groups: traumatic, inflammatory, neoplastic, and neurovascular dysfunctions, as follows:

I. *Traumatic*
   A. Surgical trauma
   B. Skull fractures
   C. Birth injuries
II. *Inflammatory*
   A. Suppurative otitis media, acute
   B. Secretory otitis
   C. Acute and chronic mastoiditis
   D. Cholesteatoma
   E. Herpes zoster oticus (Ramsey Hunt syndrome)
III. *Neoplastic*
   A. Benign tumors
   B. Malignant tumors
IV. *Neurovascular dysfunction*

It is difficult to evaluate the relative incidence of each of these lesions. Certainly Bell's palsy is by far the most common and comprises about 75 per cent of all peripheral palsies. Traumatic injuries, including surgical, are the next most important group and account for 10 to 20 per cent of all cases. Acute otitis media accounts for less than five per cent of all cases.

I. *Traumatic Origins*

The most common type of traumatic injury to the facial nerve occurs during middle ear or mastoid surgical procedures and is most often accidental. Of the two main types of injury to the facial nerve during operation,[8] compression of the nerve by an impacted bone chip is the most common; the other is the accidental removal of part of the nerve. The upper vertical segment of the nerve is the part most often injured.

Paralysis of the facial nerve can be a complication of operation on the stapes.[9] Delayed paralysis can occur after mastoid operation. In these cases the pathologic changes are usually secondary to pressure from the packing or from hemorrhage into the fallopian canal.

Good illumination, magnification, experience, and constant awareness of the facial nerve anatomy are all-important in the prevention of these complications.

Skull fractures and birth injuries are less common causes of facial palsy. Most of these will respond to conservative treatment. Transverse fractures of the temporal bone are very serious and usually sever the nerve and destroy the inner ear.[10] The longitudinal fractures offer a much better prognosis. These latter fractures usually affect the middle ear and are surgically accessible.

II. *Inflammatory Origins*

Only about seven per cent of facial palsies are due to ear infections. Of this group, acute suppurative otitis is the most common. The outlook for facial palsy with acute otitis is excellent. Facial palsy complicating acute mastoiditis also offers good hope for complete recovery. If the paralysis accompanies chronic mastoiditis or a cholesteatoma, the chance for recovery is diminished, depending upon the duration of the paralysis.

The Ramsey Hunt syndrome is a herpetic zoster infection of the geniculate ganglion which causes facial palsy, pain in the ear, a herpatic eruption in the external ear canal, and changes in taste and lacrimation on the affected side. This is ordinarily a self-limited disease with an excellent prognosis.[11]

III. *Neoplastic Origins*

Neoplastic disease of the temporal bone which involves the facial nerve is rare. Neuromas are the most common benign tumor which affect the facial nerve.[12, 13] Only a

small number of these have been reported. They usually present with the triad of deafness, canal granulations, and aural discharge.[14] Malignant tumors are also very rare, although sarcomas have been reported.[15] Glomus jugulare and epidermoid tumors of the mastoid are occasionally seen with secondary facial palsy.

IV. *Neurovascular Origins*

Bell's palsy, as noted above, accounts for the majority of intratemporal facial nerve palsies. This term is used to describe those cases which develop an abrupt peripheral facial palsy in an otherwise normal person with no other ear disease to account for it. The term unfortunately is often loosely used to describe any facial palsy. Too many times serious illnesses have been overlooked under the guise of an incorrectly labeled Bell's palsy.

The inciting factor in Bell's palsy is unknown. However, there is some evidence that exposure to cold may be a triggering factor.[16] Ear surgeons have repeatedly found abnormalities of the lower vertical segment of the nerve[17] and Cawthorne has described the gross swelling of the facial nerve just above the Stylomastoid foramen, with discoloration of the nerve.[18]

Bell's palsy is a benign illness with no danger to life. It can, however, be very disabling cosmetically and psychologically when it leaves permanent damage. Because it is not a mortal disease there has been very little postmortem study of its nature and cause.

ELECTRODIAGNOSIS

Electrical reactions of the facial muscles are important in both prognosis and treatment of the injury. There are three types of tests available: faradic, galvanic, and electromyographic.[19]

The faradic current is used to test the conductivity of the nerve. In a mild injury the conductivity will be diminished but will not disappear. In severe injuries the faradic stimulation over the nerve will give no response. This is delayed, however, until Wallerian degeneration has occurred. For this reason, testing with a faradic current is of value only after 21 days.

Galvanic stimulation is used to test the muscles directly. Reaction will disappear only when muscle atrophy and fibrosis have taken place. If the galvanic current gives no response, operation upon the nerve would, of course, be useless. Galvanic stimulation is also valuable as part of the physiotherapy to the injured nerve.

Electromyography tests the viability of the facial muscles after facial nerve injury. It is a valuable aid in both diagnosis and prognosis, but requires expert interpretation.

MEDICAL MANAGEMENT

Treatment for facial nerve palsy may be either medical or surgical, depending on causation. Each case has to be handled on an individual basis, as the type and seriousness of the injury vary greatly. Certainly the majority of Bell's palsies can be treated conservatively. Vasodilatation is the cornerstone of medical treatment. Nicotinic acid and parenteral histamine are both widely used and good vasodilators. Stellate ganglion blocks are occasionally used with success.[20] Recently, cortisone has become very popular in the treatment of Bell's palsy.[21, 22]

Certainly, if the disease is secondary to a vascular dysfunction with secondary ischemia and edema, steroids would seem to be the most logical medical treatment. The great problem is in evaluating these various drugs.

Physiotherapy is a valuable adjunct to both medical and surgical treatment. Massage and heat are useful for maintaining muscular tonus. If the nerve is completely severed, galvanic stimulation is of value in keeping muscle tonus intact.

Other supportive measures include eye patches, dental splints to hold up the dragging lip, exercises and vitamin therapy.

SURGICAL MANAGEMENT

The indications for surgical exploration of the facial nerve are somewhat controversial.

In acute suppurative otitis media, myringotomy and antibiotics will ordinarily suffice. If the paralysis continues with no improvement, or in those cases where palsy follows after a week or ten days, the case

should probably be considered as an acute mastoiditis and a cortical mastoidectomy be done. Acute mastoiditis with facial palsy is an indication for simple mastoidectomy. In these cases the nerve should not be explored. The surgical drainage will relieve the pressure on the nerve.

Long-standing ear infections and cholesteatomas with facial paralysis require a type of mastoidectomy. Surgical exploration of the tympanic portion of the nerve should be done in these cases. The prognosis of facial paralysis in these chronic inflammatory diseases is poor.

Most facial palsies after skull fractures recover spontaneously. Certainly the transverse fractures with inner ear destruction are best left alone. Longitudinal fractures with complete palsy and conductive hearing loss are no problem. These should be explored with repair of both the facial nerve and the middle ear conductive mechanism. If the paralysis is partial or comes on after a latent period, the nerve can be expected to regain function in a very high percentage of cases.

However, if the paralysis is complete at time of injury, the chance of recovery is decreased, but exploration is usually indicated. Some think it is safe to watch the nerve for six to eight weeks before decompression. Some authors think there is a better chance of recovery if exploration and repair of the nerve is performed as soon as the patient's general condition permits.[23]

If there is a gap in the nerve, it may be necessary to reroute the nerve and reapproximate it. A simpler and probably just as good a method is the use of a free nerve graft between the two severed ends. Even a piece of catgut will serve to help the nerve regenerate in an orderly fashion.

The same principles of surgical treatment of temporal bone fractures apply to traumatic injury of the nerve during mastoid and middle ear operations. If there is a latent period before the appearance of the paralysis, one can assume that it is due to pressure from packing or some other benign cause. These can, in most cases, be treated conservatively. If the paralysis comes on immediately after surgery or during operation, the facial nerve must be explored as soon as the patient's condition allows.

The indications for surgical decompression in Bell's palsy are not clear-cut, and a few authors think there is no place for surgery,[24] as about 85 per cent will regain complete function with medical treatment. However, if the paralysis is complete, the chance of complete recovery is less than 50 per cent. It is pretty well accepted that the partial palsy should be treated with the usual medical means, including cortisone, with the expectation of full or near full recovery.

Decompression is of the most value in those cases of complete paralysis which do not show signs of recovery after a period of medical care.

One problem is deciding how long to wait before proceeding with decompression when the nerve is totally paralyzed. All studies have shown the earlier the decompression, the better the chance of recovery. Most authorities advise early decompression.[25]

Since operation is not desirable when medical therapy will suffice, two factors must be considered in finding the optimum time for decompression. The first is a waiting period, to see if the nerve is going to regenerate spontaneously. This waiting period should not be over two months and preferably should be only three or four weeks, if one wishes to give the nerve the best possible chance.

Reaction to faradic current placed over the nerve is the second factor. If there is no response, one can assume that the nerve is nonconductive and dead. However, as it takes up to 21 days for Wallerian degeneration to take place, and the nerve will be conductive up to this time, this test is of value only after three weeks.

Rational criteria for nerve decompression for Bell's palsy are as follows:

1. If there is no faradic current after three to four weeks;
2. If there is complete facial palsy with no improvement after four to six weeks of medical care.

Some prefer to wait two months before decompression. This is also acceptable treatment, although the chance of perfect results will be decreased. On the other hand, waiting two months before operation will almost never be quite useless since less than five

per cent of these cases will recover spontaneously.

Facial nerve exploration can be done by either the endaural or the postauricular approach. When operating for traumatic injuries and middle ear disease, the endaural approach is preferred.[26] If the tympanic portion of the nerve is damaged, the incus and malleus will have to be sacrificed but the stapes can be saved for a Type III tympanoplasty. It is not necessary to decompress the entire fallopian canal, but only 4-5 mm. on either side of the diseased area.

Since Bell's palsy is a disease of the lower vertical segment of the fallopian canal, the postauricular approach gives the better view. Here again the entire nerve does not need to be decompressed but only that part of the nerve from the pyramidal bend to the stylomastoid foramen.[27] The middle ear conductive mechanism need not be disturbed. In Bell's palsy it is important to split the sheath of the nerve in order to let the nerve expand. Ordinarily the nerve is best approached by following the digastric ridge.

When medical and direct surgical repair of the nerve fail, there are several other procedures to help the patient maintain the tonus of that side of the face.[28] Fascial strips have been advocated to serve as a splint for the facial nerves.[29] Fascial-hypoglossal nerve anastamosis are also of value and give good facial mobility in the majority of cases.[30] The drawback of all these plastic procedures is that they do not provide for any emotional movement of the face.

SUMMARY

Intratemporal facial nerve palsy is a relatively common disorder amenable to therapy. One must be constantly aware that there are many causes of this disorder other than Bell's palsy. Cortisone and vasodilators are the mainstays of medical therapy available. Surgical exploration is a valuable part of the treatment in selected cases. □

BIBLIOGRAPHY

1. Bunnell, S.: "Surgical Repair of the Facial Nerve," Arch. of Oto. 25: 235, (March) 1937.
2. Cawthorne, T.: "The Role of Surgery in the Investigation and Treatment of the Facial Nerve," The Lancet 262: 1219, (June) 1952.
3. Guild, S. R.: "Absence of Part of the Bony Wall of the Facial Canal," Laryngoscope 59: 668, 1949.
4. Hollinshead: "Anatomy for Surgeons, Vol. I, The Head and Neck," Hoeber-Harper 1958, pages 194-195.
5. Henner, R.: "Congenital Ear Malformations," Arch. of Oto., 71: 454, 1960.
6. Cawthorne, T.: "Peripheral Facial Paralysis, Some Aspects of its Pathology," Laryngoscope 56: 653, 1946.
7. Best & Taylor: "Physiological Basis of Medical Practice," Williams and Wilkin Co., Baltimore, 1955, page 913.
8. Watkyn-Thomas: "Diseases of the Throat, Nose and Ear," Charles Thomas, 1953, pages 748-749.
9. House, P. H.: "Unfavorable Results of Stapes Mobilization Surgery," Arch. of Oto. 71: 313,, (Feb.) 1960.
10. McHugh, H. E.: "The Surgical Treatment of Facial Paralysis and Traumatic Conductive Deafness, in Fractures of the Temporal Bone," Ann. Otol. 68: 855, (Sept.) 1959.
11. Sacks & House: "The Ramsey-Hunt Syndrome," Neurology 6: 262-268, (April) 1956.
12. Roberts, G.: "Neuromas of Facial Nerve in the Middle Ear and Mastoid," 37: 62, (Jan.) 1943.
13. Ohnushi, Y.: "A Case of Neuroma of the Facial Nerve with Facial Paralysis," Oto-Rhin-Laryng. 10: 420-25, 1937.
14. Oultman & Simon: "Neurofibrosarcoma of the Facial Nerve Involving the Tympanomastoid," Arch. Oto. 54: 162, 1951.
15. Kettel, K.: "Intratemporal Sarcoma of the Facial Nerve," Arch. Oto. 52: 778, 1950.
16. Cawthorne & Haynes: "Facial Palsy," Brit. M. J. No. 5003, page 1197, November 24, 1956.
17. Bollance and Duel: "The Operative Treatment of Facial Palsy," Arch. Oto. 15: 1, 1932.
18. Kettel, K.: "Bell's Palsy," Arch. Oto. 46: 4, 1947.
19. Sullivan, J. A.: "Recent Advances in the Surgical Treatment of Facial Paralysis and Bell's Palsy," Laryngoscope 62: 449,, (May) 1952.
20. Korkis, F. B.: "The Treatment of Recent Bell's Palsy on a Rational Etiological Basis," Arch. Oto. 15: 5, 1957, pages 562-569.
21. Robison and Moss: "Treatment of Bell's Palsy with Cortisone," J.A.M.A., January 9, 1954.
22. Rothlender, H. H.: "Bell's Palsy Treated with Cortisone," Am. J. M. Sc. 225: 358, 1953.
23. Lewis, M. L., Jr.: "Diagnosis and Treatment of Facial Paralysis, Secondary to Basal Skull Fractures," Laryngoscope 69: 744, (June) 1959.
24. Paine, R. S.: "Facial Paralysis in Children," Pediatrics 19: 303, 1957.
25. Wasserman, D.: "The Value of Early Decompression of the Paralyzed Facial Nerve," Arch. Oto. 72: 3, (Sept). 1960.
26. Merriman, O. H.: "Endaural Tympani Approach to the Facial Nerve," Acta. Oto-Laryn. 49: 495, (Nov.-Dec.) 1958.
27. Shambaugh, G. E.: "Surgery of the Ear," Saunders Co., Phila., Pa., 1959, page 558.
28. Niklison, J.: "Contribution to the Subject of Facial Paralysis," Plastic and Reconstructive Surgery, 17(4): 279, 1956.
29. Brown and McDowell: "Support of the Paralyzed Face by Fascia," J.A.M.A. 135-18 (Sept. 6) 1947.
30. McKenzie & Alexander: "Restoration of Facial Function of Nerve Anastomosis," Am. Surg. 132-411, 1950.

800 N.E. 13th, Oklahoma City, Oklahoma

Salmonella Meningitis*

HARRIS D. RILEY, Jr., M.D.
MAX DEARDORFF, M.D.

In recent years there has been an increase in the incidence of salmonella infections, including meningitis. This report reviews the various aspects of incidence, diagnosis and treatment of this serious infection—salmonella meningitis.

SALMONELLA MENINGITIS, while not common, is of interest to pediatricians because the great majority of the cases occur in infancy. There is evidence that the disease is increasing in this country, probably because of greater consumption of egg and meat products, both of which are prone to contamination by organisms of the salmonella group. In addition, there is impelling need for improved therapy of this form of meningitis, which at the present is associated with such high mortality.

It is the purpose of this paper to report two cases occurring in infants, to review the therapeutic effects of various agents in these cases, and to review the literature concerning this disease.

CASE SUMMARIES

Case 1 (figure 1): L.E.R.,** a 7-week-old white male infant, was admitted because of convulsions and fever. He had been entirely well until five days prior to admission at which time he became fretful and febrile. Although he continued to take his feedings well, he became increasingly more irritable, the fever decreased, and four days prior to admission he was noted to have convulsive movements of the right arm and leg. He was seen at this time by his referring physician and treated with oral penicillin and antipyretics with some decrease in fever. Two days prior to admission color became poor, fever increased, and the convulsions recurred and were almost continuous. At this time he was referred for further study and treatment.

Physical examination on admission revealed a well developed and nourished white male who was quite irritable and in acute distress. Temperature was 100° F. (R) and pulse rate was 120 per minute. He was having intermittent generalized convulsions and was cyanotic with these episodes. The anterior fontanelle was tense and bulging and there was marked nuchal rigidity. There was bilateral nystagmus and irregular respirations. Head circumference was 39 cm. There was no rash or petechiae.

Laboratory findings on admission revealed a slight proteinuria and glycosuria. Subsequent urinalyses were normal. Hemoglobin was 10.3 grams/100 ml. and white cell count was 12,250/cm. with a normal differential. Tuberculin and histoplasmin skin tests were negative as was serologic test for syphilis.

The initial impression was that the patient had acute meningitis. A lumbar puncture revealed purulent spinal fluid containing 52,100 leukocytes/cmm., the majority of which were polymorphonuclear in type, protein 264 mg./100 ml. and a trace of sugar. Blood, stool and spinal fluid cultures yielded Salmonella typhimurium. Bilateral sub-

*From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

**This patient was seen at Vanderbilt University Hospital, Nashville, Tennessee, and is reported with permission of Doctor Amos Christie.

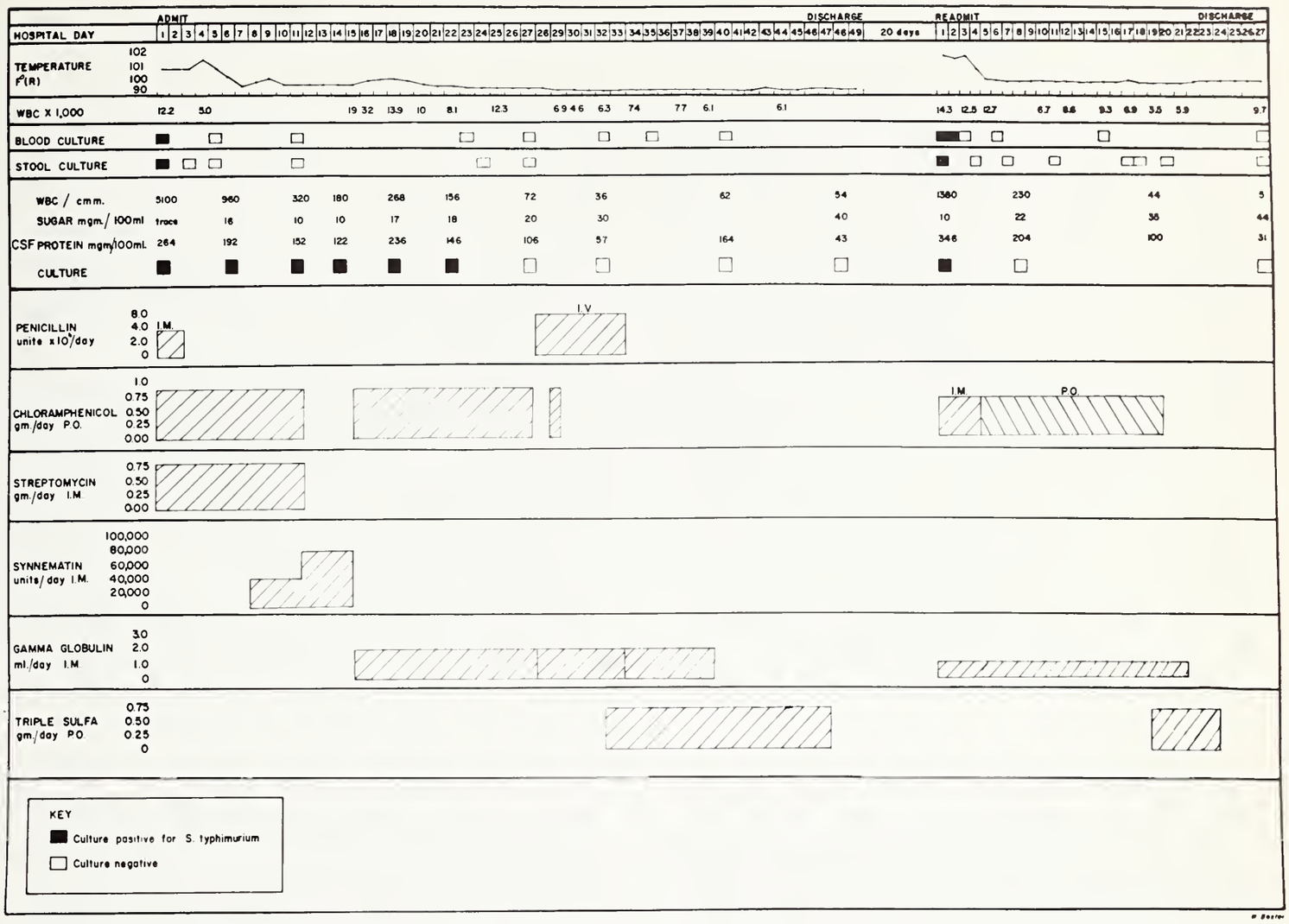


Figure 1. (Case 1). Clinical and laboratory course in a 7-week-old male with S. typhimurium meningitis.

dural punctures were performed and revealed a small amount of purulent fluid which was sterile on culture. *In vitro* susceptibility studies revealed the organism to be highly sensitive to chloramphenicol, tetracyline, chlortetracycline, neomycin and polymyxin, moderately sensitive to streptomycin, but resistant to sulfonamides and oleandomycin.

On admission therapy with parenteral fluids, penicillin 4 million units/day, chloramphenicol 800 mg./day, and streptomycin 0.8 grams/day intramuscularly was started. After the culture results were obtained on the second day, penicillin was discontinued. By the sixth hospital day the spinal fluid pleocytosis had decreased to 960 white cells/cmm., the sugar content had risen to 18 mg./100 ml. and the protein had fallen to 192 mg./100 ml. However, spinal fluid culture was still positive for S. typhimurium, although the blood and stool cultures were now negative. On the eighth hospital day, therapy with synnematin B 40,000 units/day intramuscularly was started and increased to 80,000 units/day on the twelfth hospital day. After eight days on this drug, there was a further decrease in the spinal fluid pleocytosis and protein, but the spinal fluid cultures remained positive. At this time, gamma globulin 2 ml./day intramuscularly was started. Chloramphenicol 800 mg./day, which, along with streptomycin, had been discontinued four days previously, was resumed. After eight days of combined therapy with chloramphenicol and gamma globulin, spinal fluid cultures had become negative and the pleocytosis and protein content had markedly decreased with some elevation in the sugar content (figure 1). In addition to specific antimicrobial therapy, he received supportive therapy with blood transfusions and parenteral fluids. A skeletal survey revealed no evidence of osseous infection.

On the 27th hospital day the spinal fluid culture was erroneously reported as again

positive and, for this reason, intravenous penicillin, eight million units daily, was started along with continuation of gamma globulin. However, when this error was noted, penicillin therapy was stopped and triple sulfa 0.75 grams/day orally was started. Figure 1 reveals that following this date there was further improvement in the spinal fluid cell count, protein and sugar contents and cultures remained sterile. Chloramphenicol was discontinued on the 29th day because of a fall in the white cell count to 4,600/cmm. A bone marrow aspiration at this time revealed normal erythroid elements and slight myeloid hyperplasia suggesting a regenerative marrow response. Reticulocyte and platelet counts were normal.

On approximately the 27th hospital day, the infant began to exhibit the first clinical improvement becoming alert with disappearance of the signs of meningeal irritation.

Although his developmental pattern was still considerably below normal, he continued to show progressive clinical improvement and was discharged on the 49th hospital day.

The patient did well following discharge for approximately 14 days. At this time there was a recurrence of fever, irritability, associated with periods of somnolence. He was readmitted to the hospital 20 days after discharge. On admission he again showed evidence of meningeal irritation with a tense bulging fontanelle, nuchal rigidity, temperature 101.6° F. (R) and slight opisthotonos. A lumbar puncture at this time revealed 1,380 cells/cmm., a sugar content of 10 mg./100 ml. and protein 348 mg./100 ml. in contrast to a value of 43 mg./100 ml. 20 days previously. Blood, stool and spinal fluid cultures were again positive for S. typhimurium; the *in vitro* susceptibility pattern was unchanged. Therapy with chloramphenicol 700 mg./day intramuscularly and gamma globulin 1 ml./day intramuscularly was initiated. There was a prompt drop in fever and blood cultures became sterile in three days, stool cultures in four days, and the first repeat lumbar puncture eight days after admission revealed sterile spinal fluid with marked improvement in the spinal fluid pleocytosis, protein and sugar content. Further clinical improvement continued. Chloramphenicol was continued for 19 days but because of a drop in the white cell count to 3,500/cmm. it was discontinued. However, the leukocyte count promptly rose to 9,700 cells/cmm. by the time of discharge. Gamma globulin 1 ml./day intramuscularly was continued for a total of 21 days. Repeat lumbar punctures revealed sterile spinal fluid cultures and continued improvement in other spinal fluid components, so that by discharge on the 27th hospital day all values were within normal limits.

The patient exhibited continued clinical improvement and at the time of discharge his developmental pattern was felt to be essentially normal.

He was followed at regular and frequent intervals in the outpatient clinic. His head circumference remained within normal limits. When last seen at 10 months of age, he was pulling up unassisted, walking with support, had a vocabulary of two or three simple words, and seemed to be entirely normal developmentally. There was no evidence of any recurrence of infection.

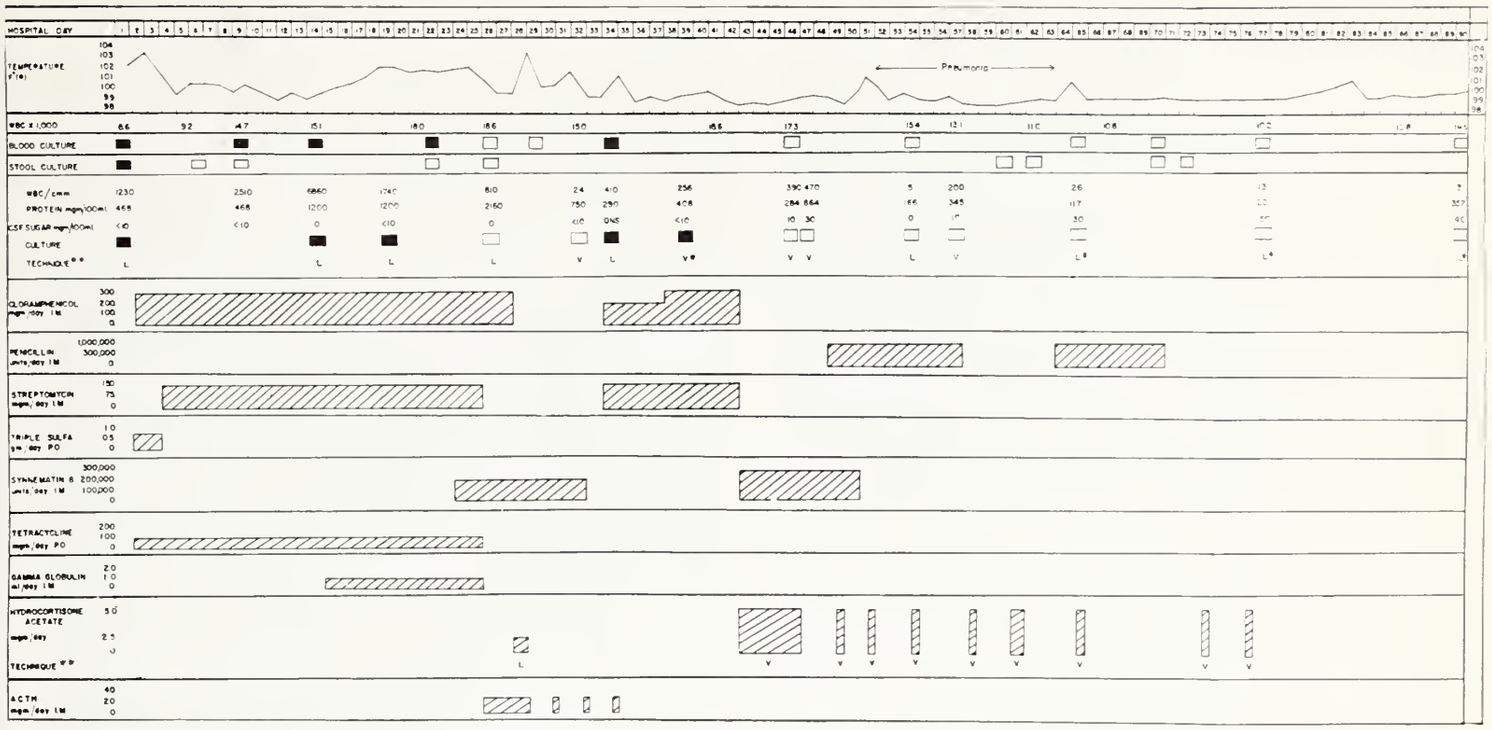
Following the initial diagnosis of salmonella infection, the family was requestioned and it was learned that the patient had been fed raw milk strippings from the family cow who had nursed a sick calf. The calf expired shortly after the patient was admitted to the hospital and arrangements were made for an autopsy. S. typhimurium was cultured from the gallbladder and the intestinal tract of the calf. However, it could not be isolated from milk samples obtained from the cow,

---

Since graduating from Vanderbilt University School of Medicine in 1948, Harris D. Riley, Jr., M.D., has been certified by the American Board of Pediatrics. He is now Professor of Pediatrics at the University of Oklahoma School of Medicine.

Doctor Riley is a member of the Society for Pediatric Research and the American Academy of Pediatrics.

Max Deardorff, M.D., participated in this study while a fourth year medical student at the University of Oklahoma School of Medicine. He graduated in 1959 and took an internship at the Hillcrest Hospital in Tulsa.



*CSF at this time obtained by other route (lumbar or ventricular) revealed essentially some findings.
**L—Lumber puncture
V—Ventricular puncture
Key
Culture positive for S. enteritidis
Culture Negative

Figure 2. (Case 2). Clinical and laboratory course in a 10-day-old male infant with S. enteritidis meningitis.

other members of the family or the water supply at the home. No other members of the family became ill.

Case 2 (figure 2): W.D.C.,* a 10-day-old white male infant, was admitted to the hospital because of diarrhea, fever, and convulsions beginning two days previously. His weight had decreased from 9 lbs. ¾ oz. at birth to 7 lbs. 13 oz. at the time of admission.

He was the result of a full-term normal pregnancy uncomplicated by any known infections or other abnormalities. Labor was uneventful but immediately after birth a large amount of tenacious secretions were aspirated from the upper respiratory passages. He reportedly passed a bloody stool shortly after birth but there was no recurrence of abnormal stools until two days prior to admission. At this time, he had the sudden onset of diarrhea with six to eight liquid yellow stools per day. The stools contained no gross blood but were described as being quite large. The diarrhea was accompanied by fever. Shortly after the onset of the diarrhea, a generalized convulsion occurred and recurred several times in the ensuing two days.

*This case is reported through the courtesy of Doctor J. N. Lysaught, Oklahoma City, Oklahoma.

Neither his mother nor any other members of the family developed any evidence of illness and there had been no significant illnesses in the family or home during the gestation period of the patient.

Physical examination on admission revealed a well developed white male infant who was seriously ill, cyanotic, and opisthotonic. There was evidence of recent weight loss and dehydration. Temperature was 102.2° F. (R), pulse 130/min., and respirations 40/min. Massive generalized convulsions occurred almost continuously. Except for a tense anterior fontanelle and other signs of meningeal irritation, the remainder of the examination was not remarkable. Head circumference was 35 cm.

Admission laboratory data revealed hemoglobin 13.2 gm./100 ml., hematocrit 46 per cent, leukocyte count 8,650/cmm., with a normal differential. The urine showed no abnormalities. Tuberculin and histoplasmin skin tests and Wasserman were negative. The spinal fluid was turbid and contained 1,230 leukocytes/cmm., protein 468 mg./100 ml., and sugar content less than 10 mg./100 ml. Blood, stool and spinal fluid cultures obtained on admission all yielded a luxuriant growth of Salmonella enteritidis. Drug sus-

ceptibility studies revealed the organism to be most susceptible *in vitro* to chloramphenicol and tetracycline.

On the basis of *in vitro* antibiotic susceptibility results, he was started on chloramphenicol 300 mg./day, triple sulfonamides 0.75 gm./day and tetracycline 100 mg./day. Streptomycin 150 mg./day was added on the fourth hospital day. The clinical course is depicted in figure 2. After 14 days there was no real clinical improvement except for a fall in temperature. Stool cultures had become negative but blood and spinal fluid cultures were still positive and there was a further increase in the spinal fluid pleocytosis and protein content and a further decrease in the sugar concentration. At this time gamma globulin 1.0 ml./day intramuscularly was added to the therapeutic program and continued for 11 days. Although there was a decrease in the spinal fluid cellular response, the culture remained positive for S. enteritidis and there was no significant improvement in the protein and sugar contents. The fever recurred and his general clinical condition deteriorated.

On the 26th hospital day he was started on synnematin B 180,000 u/day intramuscularly, and tetracycline, streptomycin, chloramphenicol and gamma globulin were discontinued. On the third day of this therapy the first negative spinal fluid and blood cultures were obtained. After nine days of therapy with synnematin B, a total of three negative spinal fluid cultures had been obtained and the spinal fluid protein had fallen from 2,160 to 750 mg./100 ml. Clinically there was a distinct improvement in the patient's condition. Because of exhaustion of supply, synnematin B was discontinued temporarily. This was associated with a febrile spike and blood and spinal fluid cultures again became positive and remained so despite chloramphenicol and streptomycin in large doses.

When synnematin B 250,000 u/day intramuscularly was resumed on the 43rd day (streptomycin and chloramphenicol were discontinued), there was again clinical improvement and blood and spinal fluid cultures became sterile. Therapy at this dosage level was continued for eight days. Repeated blood and spinal fluid cultures subsequent to discontinuing synnematin B have remained negative (figure 2), and there was no clinical evidence of infection except for two bouts of bronchopneumonia which responded satisfactorily to penicillin.

Because of a rise in the spinal fluid protein on the 28th hospital day to 2,160 mg./100 ml., therapy with ACTH 25 mg./day intramuscularly was initiated in an effort to diminish the formation of adhesions in the subarachnoid space. There was some decrease in the spinal fluid protein over the next eight days. However, it was obvious that hydrocephalus was developing and by the 36th hospital day, the head circumference measured 42 cm. Frequent ventricular taps became necessary to remove excessive fluid and control pressure symptoms. On the 43rd hospital day hydrocortisone acetate in 5 mg. increments was injected into the ventricular system and continued at regular intervals. There was a decrease in the protein content in the fluid removed by both lumbar and ventricular routes (figure 2). However, the hydrocephalus continued to increase, the head circumference measuring 46.5 cm. at the time of discharge. Pneumoencephalography shortly before discharge revealed a block at the level of the fourth ventricle with massive hydrocephalus and a very thin cortex. During the period of adrenal steroid therapy there was no evidence of exacerbation of the meningeal infection.

An intensive effort was made to determine the source of the infant's infection. Appropriate bacteriologic and other studies of personnel at the hospital where the infant was born, parents, other members of the family and other contacts failed to reveal any possible sources of the infection.

Following discharge the hydrocephalus continued to progress despite repeated ventricular taps. However cultures of the ventricular fluid remained sterile. When readmitted two and one-half months after his first discharge, the head circumference was 58 cm. but ventricular fluid contained only three leukocytes/cmm., protein 104 mg./100 ml. and a normal sugar content. Blood, stool, ventricular and spinal fluid cultures yielded no growth on several occasions. Following craniotomy and a shunt procedure on the fourth ventricle, the head circumference de-

creased to 52.5 cm. However, this improvement was only temporary and within three months the head measured 58 cm. in circumference. The hydrocephalus increased progressively and the infant expired three months later during an intercurrent pulmonary infection.

DISCUSSION

The first case of salmonella meningitis was reported by Ghon[1] in 1908 and was due to Salmonella paratyphi B. Several authors have provided reviews of the literature concerning this disease including Bahrenburg and Ecker,[2] who reported 34 cases, Henderson,[3] Beene, Hansen and Fulton,[4] Smith,[5] Watson,[6] and Neter.[8] That by Henderson[3] is the most comprehensive; he cites 144 cases, including three of his own due to S. panama, S. newport, and S. typhimurium respectively. The report by Beene et al[4] includes a further 87 cases not referred to by Henderson and 17 cases due to S. typhi which Henderson specifically excluded from his review. These authors also include a case of their own due to S. montevideo, the first recorded case due to this organism. Smith[5] reported six of his own cases and added ten cases, including two cases due to S. typhi, which had appeared in the literature since the review by Beene et al[4] in 1951. Ripy[18] has reported on typhoid meningitis in infancy.

Saphra and Winter[19] reported that of 7,779 clinical and subclinical cases of salmonellosis observed over a 16 year period, 77 had meningitis and almost all of these were infants. Clyde[16] and Rabe[17] have reported the diverse and numerous clinical patterns which salmonella infections may produce in children.

Salmonella meningitis, while occurring in all age groups, is primarily a disease of childhood, children being affected about four times as frequently as adults. The majority of the reported cases have occurred in infancy. In Watson's[6] review of 138 cases, 81 per cent of the cases were under one year of age and approximately 25 per cent occurred in newborn nursery epidemics. All but 12 occurred in children under 15 years of age. The reason for this age distribution is not readily apparent. Most workers[7] consider salmonella meningitis to be the focal manifestation of septicemia. Zia and Haggerty[15] have reviewed the various factors which may operate to produce the susceptibility of newborns to meningeal infection of all types. These include trauma at birth, increased permeability of the blood-brain barrier, and various immunologic factors. Obviously no single explanation explains all cases. The occurrence of salmonella meningitis following other types of central nervous system infections has been pointed out. Of the 144 cases reported by Henderson,[3] five followed a previous episode of meningococcal meningitis and two occurred during the course of treatment of luetic meningitis. Neter[8] feels that salmonella bacteremia and meningitis may follow other types of infection such as otitis media and pyelonephritis. The hypothesis of decreased tissue resistance to explain the predominance in infants is difficult to confirm or disprove as is the concept of increased permeability of the gastrointestinal tract to bacteria in infants as compared to adults. The inherent susceptibility of young infants to infection, particularly meningitis, due to immunologic immaturity is probably the most important factor. Outbreaks of salmonella infections other than meningitis in newborn nurseries have been reported.[9] In addition to the specific immunity and nonspecific resistance of the host, human response to Salmonella exposure is determined by the dosage and the characteristics of the particular organism.[13]

INCIDENCE OF VARIOUS SALMONELLA SPECIES IN MENINGITIS

Table 1 shows the distribution of Salmonella species (excluding S. typhi) isolated from the cerebrospinal fluid of 167 patients with salmonella meningitis and includes those reported in the reviews by Henderson[3] and by Smith,[5] the four cases reported by Watson[6] and the two cases reported here. In addition to those shown in table 1 the following species have been reported as causing meningitis: S. bovismorbificans, S. manhattan, S. paratyphi C, S. blegdam, S. montevideo and S. dublin.

Thus, the most common species responsible for meningitis are S. enteritidis, S. paratyphi B, S. havana, S. typhimurium, and S. panama, the five species accounting for 127 of the 167 cases in table 1. As of 1951,

Salmonella Species in 167 Cases of Salmonella Meningitis

Salmonella Species	Number of Cases
S. paratyphi B	23
S. paratyphi A	7
S. enteritidis	47
S. cholerae-suis	8
S. typhimurium	18
S. panama	18
S. havana	21
S. bredeney	5
S. london	1
S. eastbourne	1
S. oranienburg	1
S. newport	2
S. anatum	1
S. derby	2
S. bareilly	1
S. loma-linda	2
S. new-brunswick	1
S. johannesburg	1
S. heidelberg	1
S. dublin	1
Undetermined	5

Table 1

23 types of Salmonella have been definitely identified as etiologic organisms in meningitis.[4]

CLINICAL PICTURE

Salmonella meningitis has no distinct or pathognomonic clinical picture. The manifestations are those of any other type of purulent meningitis and are determined chiefly by the age of the patient. As is the case of other types of bacterial meningitis occurring in the neonatal period and the young infant, the classical signs of meningeal irritation may be absent often delaying diagnosis. In this age group, salmonella meningitis often occurs in epidemics and tends to run a rapid clinical course with diarrhea as a prominent manifestation. Levinson and co-workers,[10] in a review of the literature concerning salmonella meningitis, reported that 80 per cent of the patients experienced diarrhea as part of the clinical picture. At autopsy intestinal lesions and extraintestinal localization are common in infants. In older infants and children, the disease tends to occur sporadically with a less acute course and diarrhea as a symptom is not as prominent. While the clinical picture may be less acute, the traditional signs of meningeal irritation are usually present in the child over one year of age.

Both of our patients presented because of fever and convulsions. In L.E.R. (case 1), while S. typhimurium was isolated from the stool, the patient had experienced no diarrhea. In contrast, diarrhea was a prominent clinical manifestation in the second patient and S. enteritidis was isolated from the stools.

Pathologically, salmonella meningitis is usually characterized by accumulation of exudate at the base of the brain. This predisposes to the development of hydrocephalus, as exhibited by case 2, and other neurological sequelae in survivors.

TREATMENT

The therapy of most salmonella infections, save possibly typhoid fever, is generally not satisfactory. While there have been enthusiastic sporadic reports of the successful use of chlortetracycline, oxytetracycline, tetracycline, and streptomycin in salmonellosis, these claims largely have not been substantiated. Although chloramphenicol has proved to be a useful agent in the management of S. typhosa infections, its effect in other salmonella infections has been unpredictable and frequently unsuccessful. Undoubtedly, these agents are effective in eradicating salmonella infection in some patients; the true value is difficult to assess, however, because of the lack of controls. It is well known that not infrequently patients with various types of salmonella infections recover spontaneously. MacDonald et al[14] have shown that there was no statistically significant difference between the duration of illness in a group of moderately ill children with proved salmonella enteritis treated with chloramphenicol when compared to a similar group who received no antibacterial therapy. It was further concluded that chloramphenicol did not influence the rate of clinical recovery or the bacteriologic status of the patients, the organism disappearing at approximately the same time in both groups.

Synnematin B appeared to be effective in controlling the infection in case 2. After nine days of therapy with this drug, there

was a marked improvement in the patient's clinical condition and spinal fluid cultures became negative for the first time, but again became positive when it was necessary to discontinue the drug because of exhaustion of supply. Clinical improvement resumed and spinal fluid cultures again became negative when the drug was restarted. However, in case 1 there was no clinical or bacteriologic improvement after eight days therapy with synnematin B. Synnematin B is a new antibiotic derived from the mold, Cephalosporium salmosynematum, and has antibiotic activity primarily against gram negative organism, chiefly the Salmonella group.[20] Clinical results in 25 patients with typhoid fever and one with paratyphoid fever type A were generally good.[20, 21] However, because of pain on injection and persistence of fever despite clinical and bacteriologic improvement, the drug in all probability will not become available for general commercial use.[20]

Gamma globulin in combination with chloramphenicol and certain other antibiotics has been shown to be synergistic in the treatment of certain experimental bacterial infections.[22] While this combination of gamma globulin with chloramphenicol and other antibiotics has been reported efficacious in certain human infections,[23] the lack of controls makes evaluation difficult to assess. In case 1 the combination of gamma globulin and chloramphenicol appeared to be effective in eradicating the infection on two separate occasions, whereas various other antibacterial agents singly and in combination had failed. On the other hand, in case 2 gamma globulin in combination with penicillin, streptomycin, tetracycline and, for three days, with synnematin B did not eradicate the infecting agent, S. enteritidis.

Penicillin in massive doses has been reported to be effective in treating salmonellosis in children.[24] While kanamycin has been proved ineffective in the treatment of typhoid fever, its results in other types of salmonella infection has been encouraging.[25, 26] Colimycin has also given promise in salmonella gastroenteritis in preliminary studies.[27] It has been repeatedly shown that supportive care with special attention to the state of hydration and nutrition and presence of associated diseases is of cardinal importance in the management of salmonella infections and that these measures are frequently of great adjunctive benefit in severe infections.

Antimicrobial susceptibility testing against the salmonellas is usually of no value since there is usually little or no correlation between the results of *in vitro* susceptibility test and the effectiveness of antimicrobials *in vivo*. Essentially all strains are inhibited *in vitro* by concentrations of chloramphenicol within the range of serum levels obtained in man by the administration of conventional therapeutic doses of the drug. Yet *in vivo* there may be no significant bacteriologic response.

The value of antibiotics in treating salmonella carriers is also unsettled. Kanamycin may have a place in the management of the carrier state.[25] However, in the evaluation of drug therapy for salmonella carriers it must be recalled that temporary convalescent carriage of various salmonella types is common and permanent carriage rare.[13]

PROGNOSIS

The fatality rate is high and particularly so in infants as compared with older children and adults. The introduction of newer antimicrobial agents may significantly alter the death rate in the future but experience to date has been restricted by the small number of cases available and the variable manner in which they have been treated. Watson[6] reports that 103 of 113 patients less than one year of age died, a fatality rate of 91 per cent. Twenty-one of 30 patients over age one year died of the infection. Henderson[3] reported only one recovery in 40 infants who were less than one month of age at the time of their disease, whereas 17 of 80 patients older than one month of age recovered. Beene et al[4] reported in 1951 a mortality of 83 per cent in 87 patients, several of which had been treated with tetracyclines and penicillin and one with chloramphenicol.

Watson[6] reported that all the cases of meningitis due to S. enteritidis, S. typhimurium, and S. havana infection proved fatal. Metcalfe[11] in 1950 apparently reported the first case of S. typhimurium meningitis to recover. This was an 11-year-old boy who was treated with sulfadiazine and streptomycin for 30 days; however, he relapsed two

weeks later and streptomycin was given intramuscularly and intrathecally with a gradual response. Smith[5] reported a 13-month-old infant with S. typhimurium meningitis who recovered following treatment with sulfadiazine. Patient, L.E.R. (case 1), can be added to the recovered cases of S. typhimurium meningitis.

Watson[6] reported that meningitis due to S. enteritidis had been fatal in all 45 cases in the literature. The patient reported by Chigier[12] also died. Although patient, W.B.C. (case 2) of this report with S. enteritidis meningitis died, the infecting salmonella organism had been eradicated and death was due to progressive hydrocephalus and an intercurrent pulmonary infection.

In view of the probable increasing incidence of salmonella meningitis and its serious prognosis, it is important that this infection be considered in all cases of purulent meningitis, especially in infants. The benign and subtle character of the clinical manifestations of meningitis in the young infant cannot be overemphasized. While the overall results of various antimicrobial agents in various types of salmonella infections is unpredictable, certain of these drugs, especially chloramphenicol, undoubtedly have been successful in certain cases of salmonella meningitis and septicemia. The use of kanamycin, synnematin B, colymycin and possibly gamma globulin in combination with antimicrobial agents may have an important role in the treatment of salmonella infections, especially the septicemic and focal forms, and should be considered in all such cases.

SUMMARY

Two cases of salmonella meningitis, one due to S. typhimurium and the other due to S. enteritidis, are reported and the literature on this type of meningitis is briefly reviewed. The relatively asymptomatic nature of the early clinical manifestations of this type of meningitis in infancy is emphasized and the role of various antimicrobial agents in management is reviewed.

REFERENCES

1. Ghon, J.: Bericht uber den XIV Internationalen Kongress for Hygiene und Demographie. Berlin 4: 21, 1907.
2. Bahrenburg, J. H., and Ecker, E. E.: Meningitis due to organisms belonging to the Salmonella group. J. Infect. Dis. 60: 81, 1937.
3. Henderson, L. L.: Salmonella meningitis: Report of 3 cases and review of 144 cases from literature. Am. J. Dis. Child. 75: 351, 1948.
4. Beene, M. L., Hansen, A. E., and Fulton, M.: Salmonella meningitis: Recovery from meningitis due to Salmonella sp. (Type Montevideo), with consideration of the problem of salmonella meningitis. A.M.A. Am. Dis. Child. 82: 567, 1951.
5. Smith, E. S.: Salmonella meningitis in infancy. A.M.A. Am. J. Dis. Child. 88: 732, 1954.
6. Watson, K. C.: Salmonella meningitis. Arch. Dis. Child. 33: 171, 1958.
7. Bornstein, S.: The state of the salmonella problem. J. Immunol. 46: 439, 1943.
8. Neter, E. R.: Salmonella choleraesuis meningitis: Report of a case and review of the literature on salmonella meningitis. Arch. Int. Med. 73: 425, 1944.
9. Watt, J., Wegman, M. E., Brown, O. W., Schllessmann, D. J., Maupin, E., and Hemphill, E. C.: Salmonellosis in a premature nursery unaccompanied by diarrheal disease. Pediat. 22: 689, 1958.
10. Levinson, A., Kadison, E. R., and Diamond, J. H.: Salmonella typhimurium meningitis: Report of 2 cases and review of the literature. Am. J. Dis. Child. 80: 290, 1950.
11. Metcalfe, D. C., and Wiswell, G. B.: Salmonella meningitis in the newborn. Canad. M.A.J. 62: 500, 1950.
12. Chigier, E.: Three unusual cases of meningitis in children. J. Pediat. 43: 54, 1953.
13. Gezon, H. M.: Salmonellosis. Disease-A-Month, July 1959.
14. MacDonald, W. B., Friday, F., and McEacharn, M.: The effect of chloramphenicol in salmonella enteritis of infancy. Arch. Dis. Childhood 29: 238, 1954.
15. Zia, M., and Haggerty, R. J.: Neonatal meningitis. New Eng. J. Med. 259: 314, 1958.
16. Clyde, W. A.: Salmonellosis in infants and children: An analysis of 100 cases. Pediat. 19: 175, 1957.
17. Rabe, E. F.: Salmonellosis in children. Pediat. 13: 247, 1954.
18. Ripy, H. W.: Typhoid fever in an infant complicated by typhoid meningitis. J. Pediat. 36: 376, 1950.
19. Saphra, I., and Winter, J. W.: Clinical manifestation of salmonellosis in man: An evaluation of 7,779 human infections identified at the New York Salmonella Center. New Eng. J. Med. 256: 1128, 1957.
20. Personal communication, George H. Berryman, M.D., Abbott Laboratories, North Chicago, Illinois.
21. Benavides, L.: Treatment of typhoid with synnematin B. J.A.M.A. 159: 989, 1955.
22. Fisher, M. W.: Synergism between human gamma globulin and chloramphenicol in the treatment of experimental bacterial infections. Antib. and Chemo. 7: 315, 1957.
23. Waisbren, B. A.: The treatment of bacterial infections with the combination of antibiotics and gamma globulin. Antib. and Chemo. 7: 322, 1957.
24. Rabe, E. F.: The treatment of salmonellosis with massive doses of penicillin compared with other methods of therapy. Pediat. 16: 590, 1955.
25. Riley, H. D., Jr., and N. J. Ryan: Failure of kanamycin in the treatment of typhoid fever. In press.
26. Riley, H. D., Jr.. Kanamycin in staphylococcal and other infections of infancy and childhood. Antibiotics Annual, p. 623, 1958-59.
27. Riley, H. D., Jr. and M. I. Abbott: Colimycin in the treatment of various infections of infants and children. In preparation.

800 N.E. 13th, Oklahoma City, Oklahoma.

A Review: Chorea

A Symptom Complex

JIMMY L. SIMON, M.D.*

Is all Sydenham's Chorea rheumatic? The author doubts that it is and states why.

CHOREA HAS long been thought to be associated invariably with rheumatic fever. Recently, however, several reports have appeared in the literature which casts doubt on this traditional concept. For this reason, a brief review of this symptom complex is presented.

Chorea is rarely fatal so there is little known about the true pathology. In the few cases reported in which there have been post mortems, the findings are described as a diffuse meningoencephalitis.[1] Ford[2] states, however, that chorea should be regarded as a toxic encephalopathy of more or less specific type but that its anatomical basis is still very uncertain and many neuropathologists can find no definite lesion whatsoever.

Most authorities agree that chorea is two to three times as common among girls as boys.[2, 3] It is extremely rare after puberty and below the age of three. The peak incidence is between the age of eight and 12 years.

The onset is usually gradual. Personality changes may be the first presenting manifestation. Next quick jerky involuntary movements are noted, followed shortly by difficulty in carrying out voluntary movements. Handwriting and walking become difficult. Speech becomes slurred. Occasionally, chorea may be limited to one side of the body (hemichorea). These children may resemble pseudoparetics and may have definite weakness. Chorea is aggravated by fever. The simultaneous occurrence of chorea and polyarthritis is extremely rare.[3] Chorea is usually self-limited and lasts two to three months although severe attacks may persist for a year.

Fever was thought to be the cause of chorea in the late 18th and early 19th centuries. In 1780, Stoll[4] reported several cases in which chorea and rheumatic fever coexisted. Roger[5] in 1867 proved to his satisfaction that chorea was a manifestation of rheumatic fever.

Osler[6] in 1894 stated that it was exceptional to find the heart healthy in chorea. In 1926 Mackie[7] after analyzing 393 cases of rheumatic fever and 89 cases of chorea determined that as far as future development

*From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

Jimmy L. Simon, M.D., graduated from the University of California School of Medicine in 1955, and is now certified by the American Board of Pediatrics. He is Assistant Professor of Pediatrics at the University of Oklahoma School of Medicine, Director of the Rheumatic Fever Clinic, Children's Memorial Hospital and Consultant in Rheumatic Fever, Oklahoma Department of Public Welfare.

Doctor Simon is a member of the Southern Society for Pediatric Research and the Association for Ambulatory Pediatric Services.

of heart disease, there was no difference between chorea and other types of rheumatic fever.

Jones and Bland[8, 9] in 1935 concluded that Sydenham's chorea was probably a manifestation of rheumatic fever but that proof of the relationship must await the establishment of the etiology of the two. They analyzed 1,000 consecutive cases of rheumatic fever and chorea which had been followed for an average period of eight years. Seventy-two per cent of their patients with chorea exhibited other manifestations of rheumatic fever while in 28 per cent only chorea was found. The incidence of rheumatic heart disease was 86 per cent in those patients having rheumatic fever without chorea as compared to 54 per cent in those patients having rheumatic fever with chorea. Rheumatic heart disease occurred in 73 per cent of patients with chorea and other manifestations of rheumatic fever; however, only three per cent of the patients with chorea alone developed rheumatic heart disease. They also noted that the number of attacks of chorea did not appear to influence significantly the development of rheumatic heart disease. They decided that chorea was a mild manifestation of rheumatic fever and one in itself not especially conducive to the development of rheumatic heart disease. This detailed report began to shed doubt on the belief that all chorea was rheumatic in origin.

Jacobsson[10] in 1946 reviewed 689 cases of rheumatic fever and chorea treated at the Children's Hospital in Gothenburg during the years 1922 to 1940. From his survey he concluded that chorea occurring in childhood was in actuality a form of rheumatic fever; however, in this series there were only 21 patients with chorea who did not have recurrences of rheumatic fever or did not have definite signs of cardiac involvement during the initial attack. Of these 21, eleven did not have heart damage at follow-up.

In 1947 Kagan and Mirman[11] studied the erythrocytic sedimentation rates of patients in their clinic who had exhibited chorea. They also reviewed 6,543 cases of chorea in the literature. In 67 per cent of these 6,543 cases there was no other evidence of rheumatic fever. They concluded from this survey that chorea associated with an increased erythrocyte sedimentation rate is in most instances a manifestation of active rheumatic fever. Their second conclusion was that chorea with a normal erythrocyte sedimentation rate (in the absence of cardiac failure) usually is not a manifestation of rheumatic fever. Also, those patients in the latter group are no more subject to rheumatic sequelae than other members of the population.

Lewis-Jonsson[12] in 1949 reviewed 724 cases of chorea and attributed only 467 cases to rheumatic fever.

In 1951, Bland and Jones[13] published their 20 year report on 1,000 patients that they had followed since childhood with rheumatic fever and/or chorea. In those patients having chorea with or without other manifestations of rheumatic fever, there was a 12 per cent mortality. Of those patients with no evidence of carditis in their initial attack, 44 per cent eventually developed rheumatic heart disease while 84 per cent of those patients with initial signs of carditis had rheumatic heart disease 20 years later. In some cases valvular deformity did not become evident for 15 to 20 years after the initial attack.

In 1956, Taranta and Stollerman[14] studied 51 patients with pure chorea. They found elevated streptococcal antibody titers (greater than 200 units) in 73.3 per cent of patients studied within one month of onset and 45.4 per cent of patients studied at an interval longer than one month. This was in contrast to an incidence of 95 per cent in comparable groups of patients with other manifestations of rheumatic fever. These workers analyzed the histories of 55 patients with chorea and other manifestations of rheumatic fever and found that in these children, the time period between their streptococcal infection and the onset of chorea was longer than the interval between the streptococcal infection and the first symptom and/or sign of carditits or polyarthritis. They postulated that this may explain the lack of immunologic evidence of recent streptococcal infections in some cases of chorea.

Harris et al[15] in 1958 studied 20 patients with chorea unaccompanied by any of the other manifestations of rheumatic fever (so-

called pure chorea) and 23 patients with chorea and other manifestations of rheumatic fever. They found that only approximately 30 per cent of patients with pure chorea had increased streptococcal antibody titers (greater than 256 todd units) as compared to approximately 60 per cent of patients with some other clinical evidence of rheumatic fever, either at the time of the episode or at some other time. These authors also pointed out that the distribution of streptococcal antibody titers in patients with chorea and other manifestations of rheumatic fever was the same in patients in whom the chorea was apparently a part of the same episode of rheumatic fever as the other manifestation, or in whom the chorea was an isolated symptom. This observation shed some doubt on Taranta's and Stollerman's[14] hypothesis that chorea may be a delayed manifestation of acute rheumatic fever. Harris and co-workers[15] concluded that the symptom complex of chorea can exist apart from the disease of rheumatic fever.

Chapman, Pilkey and Gibbons[16] in 1958 made a psychosomatic study of eight children with Sydenham's chorea. They found that the children were emotionally quite disturbed and concluded that Sydenham's chorea could be understood only as a psychosomatic illness potentially caused by a number of agents acting individually or jointly varying in their respective importance from case to case. They suggested that two of the etiologic agents that may be operative in chorea are severe personality disorders and rheumatic fever.

Van Trotsenburg and Koster[17] in 1954 described one new case and seven cases collected from the literature of chorea presumably due to polycythemia vera.

Taranta[18] reported in 1959 on 60 children who had had Sydenham's chorea and had been followed over a six year period in a rheumatic fever prophylaxis clinic. Both streptococcal antibody titers and throat cultures were done on these patients with each visit. Of 17 patients who had one or more streptococcal infections, three had recurrences of chorea. He noted that the clinical onset of the chorea was three to six months after the first immunologic evidence of streptococcal infection. It should be noted, however, that all three of the patients having recurrences had experienced, in addition to chorea, other major manifestations of rheumatic fever previously.

Paradise[19] in 1960 collected from the literature nine cases of Sydenham's chorea associated with systemic lupus erythematosis and described a tenth case. He found that in many cases the chorea preceded by several years other clinical manifestations of the disease. He also reported a case of chorea which occurred as a neurologic manifestation of Henoch-Schonlein Syndrome. Also in 1960 Thompson[20] reported a case of hemichorea resulting from a discrete metastasis from a carcinoma of the left lung to the right subthalamic nucleus.

Chorea without other manifestations of rheumatic fever should be treated by bed rest or sedation.[2, 21] There are several recent reports of the use of steroids in pure chorea.[22, 23] It is apparent that steroids do not seem to shorten the course of disease though they may lessen the severity of the symptoms. The use of steroids in pure chorea with the premise of preventing rheumatic heart disease is probably not warranted as indicated by the report of the combined rheumatic fever study group.[24] These observers noted that, in children with carditis due to rheumatic fever, there was no evidence that intensive and prolonged prednisone therapy caused significant reduction in the incidence of residual rheumatic heart disease.

SUMMARY

The literature pertaining to the etiology of chorea has been briefly reviewed. The conclusion is warranted that chorea may be either rheumatic or non-rheumatic in origin. The symptoms, course, prognosis, and treatment are discussed.

ACKNOWLEDGEMENT

The author wishes to thank Doctor Harris D. Riley, Jr., for his critical appraisal of the manuscript. □

BIBLIOGRAPHY

1. Wilson, M.: Rheumatic Fever. The Commonwealth Fund, Harvard University Press, Cambridge, Massachusetts, 1940.
2. Ford, F.: Diseases of the Nervous System in Infancy, Childhood, and Adolescence. Charles C. Thomas, Springfield,

Illinois, 1952.
3. Nadas, A.: Pediatric Cardiology. W. B. Saunders, Philadelphia, 1957.
4. Stoll, M.: (a) Pars Tertia Rationis Medendi, Vienna, Austria. Vols. III-IV; Obs. 7, p. 414, Obs. 8, p. 416, 1780-89. (b) Pars Septima Rationis Medendi, Vienna, Austria, 7: 6, 1790.
5. Roger, H.: Recherches Cliniques sur la Choree, sur la Rhumatisme et sur les Maladies du Couer chez les Enfants. V Prem. Partie: Du Rhumatisme Articulaire et Visceral chez les Enfants, et Specialement de leur Rapports avec la Choree. Arch. Gen. de Med. Vol. VIII: 8 iem Serie, pp. 641, 1866.
6. Osler, W.: On Chorea and Choreiform Affections. H. K. Lewis and Company, London, 1894.
7. Mackie, T. T.: Rheumatic Fever: Analytic Study of 393 Cases of Rheumatic Fever and 89 Cases of Chorea. Am. J. Med. Sci. 172: 199, 1926.
8. Jones, T. D., and Bland, E. F.: Clinical Significance of Chorea as a Manifestation of Rheumatic Fever. A Study in Prognosis. J.A.M.A. 105: 571, 1935.
9. Jones, T. D. and Bland, E. F.: Rheumatic Fever and Heart Disease. Completed 10 Year Observation on 1,000 Patients. Transact. Assoc. Am. Phys. 57: 267, 1942.
10. Jacobsson, E.: Rheumatic Fever With Chorea Minor: A Clinical Study With Special Reference to the Prognosis. Acta Pediat. 33: 1, supp. 7, 1946.
11. Kagan, B. M. and Mirman, B.: Sydenham's Chorea: A Syndrome for Differential Diagnosis. J. Pediat. 31: 322, 1947.
12. Lewis-Jonsson, J.: Chorea, its Nomenclature, Etiology and Epidemiology in Clinical Material From Malmohus County, 1910-1944. Acta Pediat. supp. 76: 1, 1949.
13. Bland, E. F. and Jones, T. D.: Rheumatic Fever and Rheumatic Heart Disease: A 20 Year Report on 1,000 Patients Followed Since Childhood. Circulation 4: 836, 1951.
14. Taranta, A. and Stollerman, G.: The Relationship of Sydenham's Chorea to Infection With Group A Streptococcus. Am. J. Med. 20: 170, 1956.
15. Harris, T. N., Friedman, S., McLean, D.: Determination of Some Streptococcal Antibody Titers and Acute Phase Reactants in Patients With Chorea. Pediatrics 21: 13, 1958.
16. Chapman, A. H., Pilkey, L. and Gibbons, M.: A Psychosomatic Study of Eight Children With Sydenham's Chorea. Pediatrics 2: 582, 1958.
17. Van Trotsenburg, L. and Koster, M.: Chorea Caused by Polycythemia Vera and Treated With Radioactive Phosphorus. Folia Psychiat. 57: 429, 1954.
18. Taranta, A.: Relation of Isolated Sydenham's Chorea in Preceding Streptococcal Infection. New Eng. J. Med. 260: 1204, 1959.
19. Paradise, J.: Sydenham's Chorea Without Evidence of Rheumatic Fever: Report of Its Association With the Henoch-Schonlein Syndrome and With Systemic Lupus Erythematosis, and Review of the Literature. New Eng. J. Med. 263: 625, 1960.
20. Thompson, H. and Carpenter, M.: Hemichorea Due to Metastatic Lesion in the Subthalamic Nucleus. A.M.A. Arch. Neurology. 2: 183, 1960.
21. Lessoff, M.: Sydenham's Chorea. Guy's Hospital Report 107: 185, 1958.
22. Ainger, L., Ely, R., Done, A. and Kelly, V.: Sydenham's Chorea: II. Effect of Hormone Therapy. Am. J. Dis. Child. 89: 580, 1955.
23. Fletcher, T. F.: Sydenham's Chorea Treated With Cortisone. Penn. Med. J. 63: 63, 1960.
24. Combined Rheumatic Fever Study Group: A Comparison of the Effect of Prednisone and Acetylsalicylic Acid on the Incidence of Residual Rheumatic Heart Disease. New Eng. J. Med. 262: 895, 1960.

800 N.E. 13th, Oklahoma City, Oklahoma.

OSMA Regional Postgraduate Course

"THE KIDNEY"

Lake Murray Lodge, Ardmore

JANUARY 30, 1962

AFTERNOON		EVENING	
4:30 p.m.	Renal Functions	6:30-7:30 p.m.	Dinner
5:00 p.m.	The Kidney and Electrolytes	7:30 p.m.	Pyelonephritis
5:45 p.m.	Panel: Acute Renal Failure	8:00 p.m.	Conference: Problem Cases

Instructors: John P. Colmore, M.D., W. O. Smith, M.D.
Robert Lindeman, M.D.

REGISTRATION FEE $7.50 (Includes Dinner)

AAGP Category I Credit—4 hours

Carcinoma of the Maxillary Antrum

JOHN L. RITAN, M.D.

This article discusses the nature of carcinoma of the maxillary antrum, reviews the literature in regard to its treatment, and reviews the experience at the University of Oklahoma Medical Center.

CARCINOMA of the maxillary antrum is a treacherous disease. Due to its insidious nature, this condition is usually diagnosed in its advanced stages (i.e.: after bone destruction has occurred).[1,2] Significant progress in the early diagnosis of this condition has not been achieved; the future, in this regard, is difficult to predict. Several methods of treatment have evolved. Most of these involve the combined use of radiation therapy and surgery.

The purpose of this report is to review the more recent literature, to report the experience at the University of Oklahoma Medical Center and to make suggestions as to the most effective method of therapy.

INCIDENCE

The maxillary antrum is involved by carcinoma far more frequently than are the other paranasal sinuses.[1] This tumor makes up 0.2[2] to 0.3[3] per cent of all cancer.

Most authors state that men are more frequently affected than are women, although Larsson and Martensson found a nearly equal sex incidence in their large series.[1,2,4,5,6]

Persons in their sixth and seventh decades are the most often affected.[1,2,3,5] The average age of onset has been reported as 56 to 61.5 years.[5,7] Cases have been reported in patients as young as 12 years.[2]

There does not appear to be any racial preponderance.[2]

ETIOLOGY

A slightly increased incidence in persons with chronic sinusitis has been reported.[1] This has been denied by some.[2]

PATHOLOGY

Grossly, the tumor most often involves the lower aspect of the antrum.[4] Division into "infrastructure" and "suprastructure" has been advocated because of its prognostic importance.[8] Histologically, practically all are epidermoid carcinoma.[2,4]

METASTASIS

The tumor spreads by lymphatic channels to the retropharyngeal, submaxillary and cervical lymph nodes. There is some dispute as to the most frequent sites of metastases.[2,4] The number of patients reported with metastasis when first seen varies from 10 to 25 per cent.[1,3]

CLINICAL FINDINGS

The condition is usually diagnosed late.[1,2] The importance of careful clinical evaluation has been stressed in the literature.[2] Pfahler and Vastine have listed the clinical manifestations as follows:[2]

1. Sense of fulness in the nose with partial or complete nasal obstruction, usually unilateral.
2. Nasal discharge which may be either mucopurulent or serosanguinous.
3. Pain, either in the form of headache or referred to the alveolus, antral floor, teeth, or the distribution of the fifth cranial nerve.
4. Paresthesia or anesthesia of the cheek.

5. Fetid odor, when necrosis is present.
6. Change in the voice characterized by nasal tones.
7. Alteration or loss of the sense of smell.
8. In the late stages, bone destruction or expansion with swelling of the face and/or alveolus or loss of teeth.
9. Ulceration of nasal tumor with hemorrhage, sometimes massive.
10. Invasion of the orbit.
11. Invasion of the skin.
12. Extension to the base of the skull with neurologic symptoms.
13. Metastasis to regional nodes, possibly with associated dysphagia and dyspnea.
14. Distant metastasis.

Larsson and Martensson[1] found that pain and purulent nasal secretion were the most common subjective symptoms in their series. The most common clinical signs were asymmetry of the face, tumor visible by anterior rhinoscopy and tumor palpable from the oral cavity. Eighty-nine per cent of their patients had one or more of these clinical signs.

DIAGNOSIS

When clinically manifest, the correct diagnosis can usually be reached by a careful physical examination, appropriate roentgenograms and biopsy.[1,2]

Although the diagnosis is usually not difficult, Ackerman and Regato[4] have listed the following differential diagnoses: dentigerous cyst, odontoma, non-secretory cyst, retention cyst, ameloblastoma, central fibroma, chondroma, myxoma, giant cell tumor, lymphosarcoma, extramedullary plasmocytoma, neurilemmoma, malignant melanoma, Ewing's tumor, soft tissue sarcoma and epidermoid carcinoma of the upper gingiva. This list should also include primary tumors of the other paranasal sinuses and nasal cavity.

TREATMENT

As in most other types of malignant neoplasm, the method of therapy ultimately becomes a choice of surgery, irradiation or a combination of these. Most authors advocate some combination.

Experience of several authors is shown in table 1.

Regato[4] treated ten patients which he considered inoperable by external irradiation alone, and reports four five-year survivals. His contraindications to primary surgical attack are: (1) invasion of the pterygo-maxillary fossa, (2) invasion of the orbit or temporal fossa, (3) invasion of the skin, (4) invasion of the ethmoid, or (5) metastasis.

Baclesse et al[9] have recently reported 94 patients treated by external irradiation alone. They report a five-year survival rate of 20.2 per cent. Six of seven "limited" lesions of the infrastructure, six of 37 "extended" lesions of the infrastructure, four of 19 lesions of the suprastructure and three of 31 advanced cases (pansinusal, ethmoido-maxillary and "unclassified") five-year survivals are reported. He used medium voltage technique. He stresses the radiographic evaluation and classification as to primary site, i.e. "suprastructure" and "infrastructure."

Larsson and Martensson[1] have reported one of the largest series. Between 1940 and 1950 they treated 334 patients. Their criteria of inoperability were not rigid, but absolute contraindications were (1) x-ray evidence of destruction of the base of the skull or pterygoid process, (2) tumors infiltrating the mucous membrane in the nasopharynx, (3) inoperable lymph node metastasis and (4) generalized metastasis. Their method consisted of intensive external irradiation followed by radical surgery and intracavitary radium application. The decision as to surgical treatment is delayed until after the course of external irradiation. Forty-five of their original 379 patients were not treated at all because of advanced dis-

---

John L. Ritan, M.D., graduated from the University of Oklahoma School of Medicine in 1957. His practice is limited to his specialty, radiology. At the time this article was written, the Author was National Cancer Institute Trainee in the Department of Radiology at the University of Oklahoma Medical Center, and is now a Reserve Medical Officer on active duty in the United States Air Force and is stationed at Maxwell Air Force Base, Alabama.

Percentage Five-Year Survivals Reported by Several Authors for Antral Carcinoma

Author	*No. of Cases*	*Method of Treatment*	*Per Cent of Five-Year Survivals*
Regato	10	External Irradiation	40%
Baclesse et al	94	External Irradiation	20%
Larsson and Martensson	128	External Irradiation followed by radical surgery and intracavitary radium	45%
	334 (total series)	(206 pts received only irradiation)	27%
Shall	219	Combined therapy (method varied)	30%
Mattick and Streuter	68	Irradiation (various methods)	10%
Hendrick	24	External irradiation followed by radical surgery and intracavitary radium	79% (4-7 years)
Tod	222	Limited surgery followed by intracavitary radium	24%
Cade	55	Limited surgery followed by intracavitary radium	50%
Dalley	169	Various methods (most by irradiation)	30%
Gibb	285	Intracavitary radium	21%
Total Cases 1480		Average % Survival	27%

TABLE 1

ease. Several initially "inoperable" cases became "operable" after irradiation. They used medium voltage technique. The external irradiation was preceded by a Caldwell-Luc incision for drainage. 6000r to 7000r was delivered to the tumor over a 30 to 35 day period. If the patient was then considered "operable," he underwent radical electrosurgery and intracavitary radium application. The initially "inoperable" cases received a slightly higher dose than the "operable" cases. Their five-year cures were as follows: all cases seen, 23 per cent; all cases treated, 27 per cent; cases treated by full (combined) course, 45 per cent.

Shall[7] has reported a series of 219 patients treated by combined therapy. Thirty-nine per cent received primary surgical treatment and 19 per cent received primary irradiation. The overall five-year survival rate was 30 per cent.

Mattick and Streuter[3] treated 68 patients by various methods including external irradiation, radium pack, and intra-antral radium with surgical drainage. Their absolute five-year survival rate was 10.3 per cent. The rate for "early" cases was 35 per cent. They recommended a combination of surgery, followed by radium application, followed by external irradiation—a regimen on which they have not reported.

Hendrick[10, 11] treated 24 patients by external irradiation (5000-6000r to the tumor in four to six weeks) followed by radical surgery and intracavitary radium if evidence of residual tumor was present. His criteria for the full course of treatment were essentially the same as that of Larsson and Martensson. Nineteen of these survived four to seven years.

Two hundred twenty-two patients treated between 1932 and 1941 are reported by Tod.[12] "Early" cases (entire tumor included in a 4 cm. sphere) were treated first by excision of the main tumor mass and then by a central radium source to 8000r in ten days to the surface of the container. Advanced cases did not have surgery; the intracavitary radium was introduced through a Caldwell-Luc defect and 8000-10,000r delivered in seven to ten days at a 2 cm. distance. She reports a five-year survival rate of 24 per cent.

Cade[13] reported 55 patients treated by intracavitary radium following destruction of the tumor by diathermy through a transpalatal incision. He delivered 8000r at the rate of 50-70r per hour with the patient being treated 10-12 hours per day. Fifty per cent of the patients survived five or more years.

Dalley[6, 14] reported 169 cases. The five-

year survival rate was 30 per cent. Most of the patients received external irradiation (4500-5000r to the tumor in 5-6 weeks using medium voltage). Additional irradiation was given by intracavitary radium if residual tumor was present or if tumor recurred. Thirty-nine patients with previously treated cancer are included in this series. He advocated primary operation for the rare "very early lesions."

Gibb[6] reported 285 patients treated by intracavitary radium alone. The five-year survival rate was 21 per cent. He advocated super voltage for advanced cases.

Others have advocated similar therapy.[15, 16, 17, 18, 19, 20]

Summary of the Experience at the University of Oklahoma Medical Center 1948-1960*

Pt.	*Age*	*Race-Sex*	*Sinusitis*	*Extent of Tumor*	*Treatment*	*Results*
J.F.	25	W/M	No	Far advanced, involved pterygoid process and pharynx.	1400-1575r to 3 ports, per external irradiation.	Dead 3 yrs. later with cancer.
M.B.	68	W/F	No	Advanced, involved orbit, palate, gingiva, face.	Radical maxillectomy followed by 2500r to ant. port in 12 days per external irradiation.	Last seen 13 months later with cancer.
K.H.	66	W/F	Yes	Advanced, involved orbit, extensive bone destruction.	None.	Lost to follow-up, presumed dead.
G.N.	53	N/M	No	Absence of ant. and lat. antral walls, limited to antrum and ethmoids.	1050r to single ant. port by external irradiation, followed by intracavitary radium, followed by 1500r to lat. port in 10-12 days.	Alive without clinical cancer at 7 yrs.
K.O.	50	W/M	No	Bone destruction laterally.	Limited excision followed by 1800r to each of 2 ports in 30 days per external irradiation.	Dead with cancer in less than 1 year.
I.C.	64	W/F	Yes	Involved nasal cavity and floor of orbit; antral walls destroyed.	2500-2750r to each of 3 ports in 23 days per external irradiation.	Dead with cancer 3 years later.
R.J.	46	W/M	No	No transillumination of antrum; ulcerated upper gingiva.	Radical Surgery followed by external irradiation.	Dead in less than 1 yr. with cancer.
B.J.	72	C/F	Yes	Swelling of face and nose; clouding of sinuses and invasion of adjoining structures; regional nodes.	1800-2500-750r to 3 ports per external irradiation followed by intracavitary radium.	Dead 13 months later with cancer.
H.E.	42	W/M	No	Proptosis, intra-oral mass, extensive bone destruction.	1800-2400r to 3 fields in 42 days per external irradiation.	Lost to follow-up, presumed dead with cancer
M.S.	46	I/F	No	Far-advanced; involved all antral walls, base of skull, regional nodes.	3650r to each of 2 ports in 43 days per external irradiation.	Dead 13 months later with cancer.
B.W.	93	N/M	No	Advanced; involved orbit, nasal cavity, palate, antral walls. zygoma.	2400r to a single port in 7 days.	Dead in less than 1 yr. with cancer.
L.W.	57	W/F	No	Far-advanced; involved cheek, antral walls, zygoma, base of skull.	3400r to each of 2 ports in 39 days.	Dead in less than 1 yr. with cancer.
N.N.	55	W/M	No	Confined to antrum.	Radical surgery.	No cancer at 2 yrs.
B.K.	66	W/F	No	Involved middle turbinate, cheek, antral walls.	Radical surgery followed by 3459r in 16 days to 1 port per external irradiation.	Dead in less than 1 yr. with cancer.
N.J.	75	W/M	No	Involved middle turbinate, cheek, orbit, gingivo-buccal sulcus.	Radical surgery.	Died of sepsis post-op.
L.H.	58	N/M	Yes	Involved antral walls, nasal cavity.	Radical surgery.	Dead in less than 1 yr from cancer of stomach.
P.F.	51	W/F	No	Involved cheek, orbit, nasal cavity, antral walls.	6300r to tumor per external irradiation, then radical surgery and intracavitary radium.	Dead in less than 1 yr. with cancer.
C.W.	71	W/M	No	Involved antral walls and cheek.	6300r to tumor in 46 days per external irradiation.	Dead in less than 1 yr. from myocardial infarct, questionable tumor remaining.
V.H.	16	N/F	No	Involved cheek, palate, gingiva, antral walls.	5800r to tumor in 36 days per external irradiation.	No evidence of tumor at 15 months.
R.S.	70	W/M	No	Advanced; involved cheek with extensive destruction of antrum, cervical nodes involved.	4200r to tumor in 53 days per external irradiation.	Alive, probably with cancer at 9 months.

*All cases have pathologic diagnosis of squamous cell carcinoma. Unless otherwise specified, x-ray doses were measured in air.

TABLE 2

EXPERIENCE AT THE UNIVERSITY OF OKLAHOMA MEDICAL CENTER

Twenty cases of proven squamous cell carcinoma of the maxillary antrum were seen at the University of Oklahoma Medical Center between 1948 and 1960 (see table 2). Eleven of the patients were males (55 per cent). The average age of onset was 57 years. The average duration of symptoms was 4.2 months. The youngest patient was a 16-year-old Negro female and the oldest patient was a 93-year-old Negro male. Four of the patients had a history of chronic sinusitis (20 per cent). Three patients had metastatic regional lymph nodes when first seen (15 per cent). This tumor made up 0.24 per cent of all cancer seen at our hospital between 1948 and 1960.

Most of the patients had advanced tumors, although only one was not treated. Two of twelve patients followed for five years or more remained alive and clinically free of cancer. One additional patient was free of tumor at two years. One patient was alive and free of tumor 15 months following treatment. Eleven patients were dead within one year.

CONCLUSIONS

The most encouraging results are those achieved by extensive primary external irradiation, followed by radical operation and intracavitary irradiation in potentially curable patients. Dalley's reasons for preferring primary irradiation are convincing[6, 14]: (1) the tumor is usually extensive when first seen and is more conveniently attacked by irradiation initially; (2) radical operation impairs the blood supply to the area to be irradiated and thus diminishes the radiosensitivity; and (3) subsequent operation may be more safely restricted to a smaller volume, particularly in regard to the orbit. Larsson's and Martensson's five-year survival of 45 per cent of 128 patients treated by this method tends to confirm this impression.

The current treatment program in this Center includes the following considerations:

1. External irradiation consisting of 6000r delivered homogeneously to the tumor over a six-week period with supervoltage equipment.

2. If the surgical specialty involved then considers the patient operable, radical operation and intracavitary radium application are carried out.

SUMMARY

The more recent literature in regard to the treatment of carcinoma of the maxillary antrum has been reviewed. The experience at the University of Oklahoma Medical Center has been included. It is concluded that, in suitable cases, treatment by external irradiation followed by radical operation and intracavitary radium will probably result in the best survival rates. □

BIBLIOGRAPHY

1. Larsson and Martensson: "Carcinoma of the Paranasal Sinuses and the Nasal Cavities, A Clinical Study of 379 Cases Treated by Radiumhemmet and the Otolaryngologic Department of Karolinska Sjukhuset, 1946-1950." Acta Radiologica 42: 149-172, August, 1954.
2. Tabb: "Carcinoma of the Antrum, An Analysis of 60 Cases with Special Reference to Primary Surgical Extirpation." Laryngoscope, 67: 269-339, April, 1957.
3. Mattick and Streuter: "Carcinoma of the Maxillary Antrum." Surgery, 35: 236-242, February, 1954.
4. Ackerman and Regato: Cancer, Diagnosis, Treatment and Prognosis, The C. V. Mosby Company, 1954. pp. 212-227.
5. Struben: "Malignant Tumors of the Paranasal Sinuses: Treatment and Results," Annals of Otology, Rhinology and Laryngology, 66: 754-765, September, 1957.
6. Snelling, Blackhouse, Dalley, Gibb, and Wilson: "Discussion on the Radiation Treatment of Cancer of the Antrum and Ethmoid." Proceedings of the Royal Society of Medicine, 50: 529-539, July, 1957.
7. Schall: "Malignant Tumors of the Nose and Nasal Accessory Sinuses," Journal of the American Medical Association, 137: 1273-1276, August 27, 1948.
8. Baclesse: "Eptheliomas of the Maxillary Antrum (Exclusive of the Ethmoids and Nasal Cavities); Importance of the Topographic Classification," Bull. Assoc. Franc. L'E'Tude Cancer, 36: 277-284, December, 1948.
9. Baclesse, Ennuyer, and Calle: "Epitheliomas of the Maxillary Sinus Treated with External Roentgen Therapy Alone; Results at Five Years," J. de Radiol. et D'Electrol, 41: 368-375, June-July, 1960.
10. Hendrick: "Treatment of Cancer of the Nasal Cavity and Paranasal Sinuses," Surgery, Gynecology and Obstetrics, 102: 322-330, March, 1956.
11. Hendrick: "Treatment of Cancer of the Paranasal Sinuses and Nasal Fossa," Archives of Otolaryngology, 68: 604-616, November, 1958.
12. Tod: "Treatment of Cancer of the Maxillary Antrum by Radium," British Journal of Radiology, 21: 270-275, June, 1948.
13. Cade: "The Achievement of Radium in the Fight Against Cancer," American Journal of Roentgenology, Radium Therapy and Nuclear Medicine, 60: 736, December, 1948.
14. Dalley: "Malignant Disease of the Antrum," British Journal of Radiology, 32: 378-385, June, 1959.
15. Burkell and Watson: "Some Observations on the Clinical Effects of Cobalt-60 Telecurie Therapy," American Journal of Roentgenology, Radium Therapy and Nuclear Medicine, 76: 901, November, 1956.
16. Devine, Scanlon and Figi: "Malignant Tumors of the Nose and Paranasal Sinuses," Journal of the American Medical Association, 163: 617-621, February 23, 1957.
17. Collins and Pool: "Treatment of Antral Cancer by Combined Surgery and Radium Therapy," Radiology, 55: 41-45, July, 1950.
18. McComb and Fletcher: "Planned Combination of Surgery and Radiation in Treatment of Advanced Primary Head and Neck Cancers," American Journal of Roentgenology, Radium Therapy and Nuclear Medicine, 77: 397-414, March, 1957.
19. Snitman: "Individualization in the Management of Carcinoma of the Maxillary Sinus," Annuals of Otology, Rhinology, and Laryngology, 54: 125-135, March, 1945.
20. Palock: "Carcinoma of the Maxillary Sinus," Annals of Surgery, 145: 68-73, January, 1957.

U.S.A.F. Hospital Maxwell, Maxwell AFB, Alabama.

The contents of the article reflect the author's personal views and should not be construed as a statement of official Air Force policy.

Congenital Diaphragmatic Hernia

HADI MALEK, M.D.
HORACE CHAITIN, M.D.

Case of congenital diaphragmatic hernia occurring in an infant is reported. This case is unusual in that it occurred at right rather than left. Operative repair is described. Patient made uneventful recovery.

CONGENITAL diaphragmatic hernia is not an uncommon condition. Case reports of successful treatment are being reported more frequently in the literature. However, compound congenital diaphragmatic hernia is statistically uncommon, especially if the herniation occurs through the right side of the diaphragm. Such a case is presented along with a general discussion of the subject of diaphragmatic hernia.

TYPES

The types of congenital diaphragmatic hernia in children are classified as follows:

1. Hernia through the pleuroperitoneal canal or the foramen of Bochdalek.
2. Large posterior diaphragmatic defect.
3. Esophageal:
   (a) short esophagus
   (b) true hernia.
4. Hernia through the foramen of Morgagni.
5. Absence of the hemidiaphragm.

EMBRYOLOGY

The embryology of the diaphragm is one of the most complex of all structures of the body. The septum transversum forms in the first month of fetal life. This descends from the cervical region thereby forming a pleuroperitoneal canal which is divided by a mesentery. In the second month the canals are obliterated by proliferation of the mesentery and the Wolffian ridges; this is the so-called "membranous stage of Douglas." It is after this stage that a true hernia with a sac forms. In the third month, the muscle mass and phrenic nerve grow into the diaphragm.

PATHOLOGY

Before the second month, if a congenital hernia occurs there is no sac. After this time, a true sac occurs. Left sided herniae are four to six times more frequent than right sided. The most common type of congenital hernia is through the pleuroperitoneal canal and in these cases the left side is affected about 12 times more than the right side. Bilateral herniae may occur. The sac, or herniation, may consist of one organ or

---

Hadi Malek, M.D., graduated from the Tehran University Medical College in 1940. His practice is limited to his specialty, general and thoracic surgery. He is a Fellow of the American Geriatric Society and is with the Veterans Administration Hospital in Muskogee, Oklahoma.

Horace Chaitin, M.D., graduated from George Washington University School of Medicine in 1942. His practice is limited to general surgery and he is certified by the American Board of Surgery.

At the time work was done on this manuscript, Doctor Chaitin was Associate Surgeon at Cumberland Hospital, Brooklyn, New York.

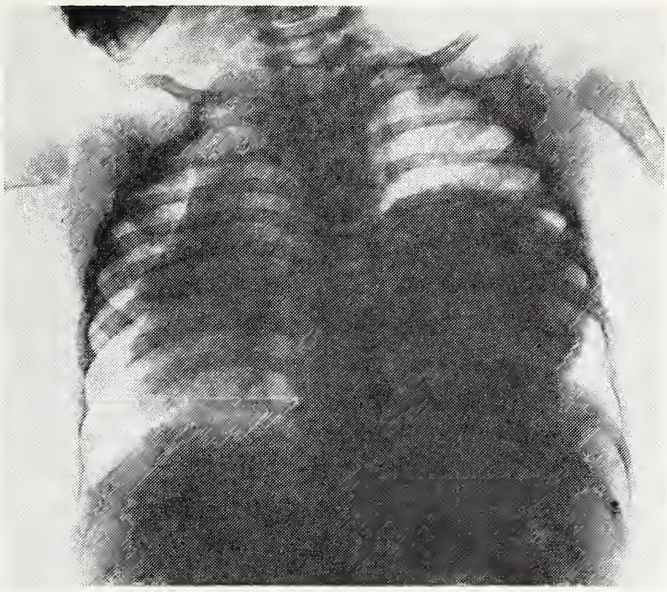


Figure 1. PA of Chest preoperatively.

many organs. In the latter case it is called a compound hernia. Dense adhesions may occur between the lung and the herniated viscus. Recently the association of hypoplasia of the lung with diaphragmatic hernia has been reported carrying a grave prognosis.

SIGNS AND SYMPTOMS

The signs and symptoms may be latent or simulate any condition of the abdomen. Harrington[1] called it the "masquerader" of the upper abdomen. It should be suspected in the newborn infant with respiratory or cardiac difficulties.

TREATMENT

In non-operative cases there is a mortality from 66 per cent to 75 per cent before the age of two.

In 1942 Stuart Harrington[1] reported 304 cases of diaphragmatic hernia. Of these 21 were in children under 12 with only four deaths. In 1925 Hedbloom[2] reported an operative mortality of 75 per cent. A review of the literature in 1936 added 17 more cases with a mortality of 47 per cent.

The treatment is surgical. The exposure is optional. The abdominal route is preferred when gastrointestinal anomalies are also suspected. Methods of repair include use of renal fascia, latissimus dorsi muscle grafts, cutis grafts and polyvinal sponge experimentally.

The case report involves congenital compound diaphragmatic herina in the right which is relatively uncommon. This is the case of a seven-month-old colored male infant admitted to the Pediatric Service of Cumberland Hospital on August 10, 1956. Chief complaint was respiratory distress. The family history was non-contributory. The postnatal state was also normal. The baby weighed five pounds, 14 ounces at birth and grew normally until the present admission.

The present illness began a few hours prior to admission with fever and difficulty in breathing.

The physical examination was negative except for respiratory distress. The blood count on admission was 4.08 million red blood cells, 14,900 white blood cells, and 67 per cent hemoglobin. Urinalysis was normal.

The patient was placed on penicillin, aspirin and fluids. He responded well. A roentgenogram of the chest on 8-11-56 revealed a herniation of the right side of the diaphragm containing liver and a portion of the gastrointestinal tract. A barium swallow on 8-16-56 revealed a high position of the duodenal cap with small intestine extending

Figure 2. X-ray of stomach and chest preoperatively.

Figure 3. Postoperative chest x-ray after repair of diaphragmatic defect.

into the hernia sac. The liver occupied the major portion of the mass in the right thorax.

The patient was transferred to the Thoracic Surgical Service and a repair of the right diaphragmatic hernia was performed on 8-30-56. The anesthesia was general with intratracheal intubation. The incision was through the right chest at the level of the eighth intercostal space.

Findings: The right lung was collapsed and atelectatic. There was a defect in the right diaphragm which was triangular in outline and extended radially from the mediastinum to the periphery and measured nine cm. in length. There was a thickened sac containing liver, small intestine and colon. Medially the right lower lobe of lung and liver were densely adherent to the sac.

Procedure: The right lower lobe of lung was dissected free by blunt and sharp dissection. Medially a portion of lung was so densely adherent to the sac that a thin layer of lung and capsule of liver were removed. The defect in the diaphragm was easily approximated with fine interrupted black silk sutures. The lung was then inflated and remained so. A drainage tube was placed in a dependent position in the chest and connected to underwater suction. With the aid of blood, antibiotics, tracheal suction, oxygen and good nursing care, the baby made an uneventful recovery. The thoracotomy tube was removed after 48 hours. The patient was discharged on 9-16-56 and at this writing is doing well.

SUMMARY

1. A discussion of congenital diaphragmatic hernia is presented.

2. A report is presented of a relatively unusual case of congenital compound hernia through the right diaphragm. □

REFERENCES

1. Harrington, S. W.: "Congenital Diaphragmatic Hernias in Children." Annals of Surgery, 115: 705, April, 1942.
2. Hedbloom, Carl A.: "Diaphragmatic Hernia." J.A.M.A., 85: 947, 1925.

Veterans Administration Hospital, Muskogee, Okla.

DIGITALIS INTOXICATION

First, do no harm--Medical Axiom

FRANCIS W. PRUITT, M.D., F.A.C.P.*

WITHERING described the clinical use of digitalis 176 years ago, and also was first to recognize its cardiotoxicity. Now as then, digitalis intoxication can be recognized without electrocardiography although the latter is most helpful in management. Digitalis intoxication may occur at *any* dosage. It appears well established that 15-20 per cent of patients admitted while on digitalis demonstrate cardiotoxicity. Mortality of 28.4 per cent was reported recently.

Digitalis leaf and the various glucosides have been incriminated. Articles have appeared emphasizing the toxicity of one glucoside over another, but while the digitalis glucosides may be more insidious in their manifestations of toxicity, there apparently is little overall statistical difference between the leaf and the glucosides.

It is frequently forgotten that uncomplicated congestive failure may be satisfactorily treated with bed rest and salt restrictions. Digitalis and its glucosides have a therapeutic to toxic ratio not adequately recognized. Older patients and those with advanced heart disease may require only 50 per cent of the drug prescribed in younger patients. It may be stated that proper digitalization of a sick patient remains an art.

Fixed digitalization and maintenance dosages seem to be medical tradition without regard to age, disease, weight, or complication. Digitalis therapy should be individualized as is done with steroid and insulin. Rarely is intravenous digitalis needed and full digitalization should be prescribed with extreme caution. Cautious trial and error should be the rule. To this should be added careful clinical and if possible electrocardiographic observations during therapy.

Factors influencing digitalis toxicity are: diuresis, especially rapid; chronic renal disease, often unrecognized; active myocardial disease, either infarction or acute rheumatic; body weight; chronic lung disease with hypoxia; and initial parenteral digitalization.

Some important signs and manifestations are: anorexia and/or nausea; vomiting and/or diarrhea; increase in severity of failure; and cardiac arrhythmias. Bigeminy may indicate as much as 75 per cent of the lethal dose of digitalis has been given. A rising ventricular rate or sudden regularization of an irregular rate are clues as are flutter and other abnormal rhythms. Some patients may exhibit an increase in cardiac rate and "pushing" digitalis can be fatal.

Treatment should include of course, the stopping of digitalis and diuretics. Oral KC1, 5-10 gm. daily may be given if no renal disease, myocardial infarction, or cardiovascular collapse is present. Intravenous potassium chloride should be reserved for acute situations, then 40-100 mEq. in 1,000 cc. of five per cent glucose may be given in 45-120 min., however, 5-60 mEq. may be effective. A cautious therapeutic trial may be helpful in doubtful cases. ECG monitoring is almost essential during intravenous KC1 therapy.

Axioms in the prevention of digitalis intoxication are: a. Avoidance of parenteral initial digitalization except with caution. b. Alertness for *any* rhythm change, especially a regularization of an *irregular* rhythm. c. Caution in the aged and underweight. d. Judicious use of potent potassium-losing diuretics. e. Trial of other measures initially. Many patients with uncomplicated congestive failure do well with bed rest and salt restriction.

A bibliography may be obtained on request from the author.

A 120 page book, "Symposium on Congestive Heart Failure" is available for $2.00 on request from the Oklahoma State Heart Association, 825 N.E. 13th Street, Oklahoma City, Oklahoma.

*Director of Graduate Education, Hillcrest Medical Center, Tulsa 4, Oklahoma.

A "New Look" Annual Meeting

OSMA's 1962 Annual Meeting, set for May 5th, 6th and 7th in Oklahoma City, will have a complete new look —beginning with a change in meeting site facilities and including a general face-lifting of the educational program.

Lagging attendance figures during the past few years have caused general chairman J. R. Stacy, M.D., and program chairman Rex E. Kenyon, M.D., to plan several innovations which it is hoped will revitalize widespread interest in what is still the state's best-attended medical meeting.

First of the changes is a switch in the site of the meeting. Previously held in the spacious Municipal Auditorium, the 1962 event will be moved to the more comfortable and convenient facilities of the Skirvin Hotel.

Secondly, the meeting dates have been adjusted so that the first two days of the meeting will fall on a weekend, thereby making it easier for physicians to leave their practices. The scientific and educational program will begin at 2:00 p.m. Saturday, May 5th, and conclude Monday evening, at which time the President's Inaugural Dinner-Dance will be held in the Persian Room of the Skirvin Tower.

Possibly the greatest change is represented by the programming of the educational features of the meeting. Dr. Kenyon and his program committee are planning to conduct three simultaneous scientific and socio-economic meetings, aimed at offering a diversified program which will contain "something for everybody."

New headquarters for the OSMA annual meeting is Oklahoma City's beautiful Skirvin Hotel and the adjacent Skirvin Tower. All scientific, social and business activities will be held within the two structures.

"Three Ring Circus"

Doctor Kenyon calls the program idea a "Three Ring Circus."

In the "main ring," the hotel's Venetian Room, ten out-of-state guest speakers will present papers in the fields of pediatrics, surgery, obstetrics-gynecology, urology, anesthesiology, medicine, dermatology, pathology and ear-nose-throat.

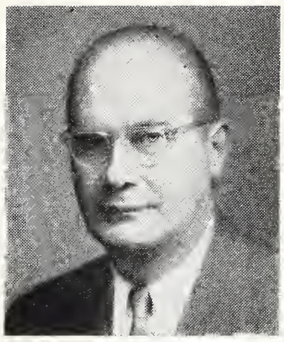
The following lecturers have already been selected for this "general interest" section of the annual meeting program: Pediatrics—Robert A. Aldrich, M.D., Seattle; Surgery—Irving M. Ariel, M.D., New York, and Claude C. Craighead, M.D., New Orleans; Ob-Gyn—James H. Ferguson, M.D., Miami; Urology—Willard E. Goodwin, M.D., Los Angeles; Dermatology — Robert Kierland, M.D., Rochester, Minnesota; Pathology—Lawrence J. McCormack, M.D., Cleveland; and, Ear-Nose-Throat—Malcolm H. Stroud, M.D., St. Louis.

Special Interest Programs

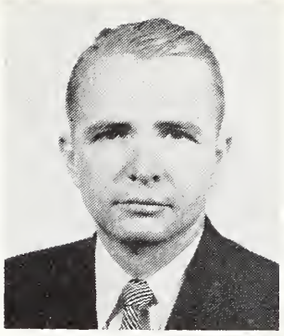
The second "ring" of the meeting will be staged in the Regency Room, where "special-interest" programs will cover the fields of obstetrics-gynecology, urology, office pathology, surgery and medicine. These presentations will be planned and presented by the appropriate specialty societies.

Socio-Economic Program

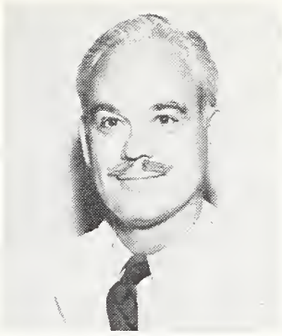
In the third arena, the Skirvin's Monterey Room, programs will be presented on such subjects as socio-economic problems, tax and legal problems, and investments. Doctor Stacy is in charge of the socio-economic program. OSMA attorney Roy C. Lytle is arranging the tax and legal portion, and stock broker Ray Dusek is handling the investment section.



KIERLAND



CRAIGHEAD



FERGUSON

Fireside Chats

On Saturday evening, May 5th, physicians will be treated to another innovation in the educational structure of the meeting. Sponsored by the state and national chapters of the American College of Chest Physicians, six roundtable "Fireside Conferences" will be conducted in the Venetian Room.

Patterned after an extremely successful experiment at last June's AMA meeting, the program will permit participants to sit across the table from national and local authorities and informally discuss various aspects of chest diseases. Subjects assigned to the six tables are: "Management of Emphysema," "Treatment of Coronary Disease," "Modern Treatment of Tuberculosis," "Treatment of Hypertension," "Rheumatic Heart Disease," and "Bronchogenic Carcinoma."

The sponsors also plan a social hour, a banquet, and short scientific program to precede the "Fireside Conferences." During the conferences, beer and soft drinks will be served by the chest physicians.

Social Events

As previously mentioned, the President's Inaugural Dinner-Dance will wind-up the 1962 meeting when it is held Monday evening, May 7th in the Skirvin Tower's Persian Room. During inaugural ceremonies, President Clinton Gallaher, M.D., Shawnee, will turn over association leadership to incoming president J. Hoyle Carlock, M.D., Ardmore.

Featured speaker for the dinner will be Oklahoma's senior Senator Robert S. Kerr. His topic is yet to be announced, but he is expected to evaluate the imminent threat of affixing health care benefits to the Social Security System.

Preceding the dinner-dance, an outdoor social hour will be held on the swimming pool terrace of the Skirvin's beautiful new Sun Suite.

Auxiliary Plans

OSMA's Woman's Auxiliary will conduct its annual session in Oklahoma City's Huckins Hotel, located a short block from the Skirvin, May 5-7. On May 4th the Board will have it annual dinner meeting in the Skirvin Hotel at 6:30 p.m.

An innovation in the ladies' program is a luncheon, style show and water ballet planned for husbands and wives at noon Sunday, May 6th. Chartered buses will transport participants from the Skirvin to the new Quail Creek Country Club, site of the social event.

Business Meetings

OSMA's Board of Trustees will hold its annual meeting session on Friday afternoon, May 4th, in the Venetian Room of the Skirvin. Following the afternoon meeting, a dinner will be served in the hotel's Monterey Room.

The House of Delegates will convene on the morning of May 5th in the Skirvin Tower's Persian Room, for an all-day and perhaps evening session.

Reagan Cancelled

Previously announced plans to conduct a "Town Hall" public forum in the Municipal Auditorium have necessarily been cancelled. The original idea was to have cinema-TV star Ronald Reagan speak on the "Threat of Strong Central Government."

Despite Reagan's ready acceptance of the invitation, his television sponsor was apparently unable to schedule him into Oklahoma during May. □

The popularity of the American College of Chest Physicians' Fireside Conferences, held during the 1961 AMA meeting in New York, is shown in the picture above. A similar program is planned for the OSMA on May 5th.

COUNTY LEADERS ASKED TO SPEARHEAD CD PROGRAM

Medical Self-Help Prescribed For Oklahomans

Spring, 1962 is the kickoff period for a nationwide program in Medical Self-Help Training—designed to prepare America's civilian population to take care of its first aid needs in the event of nuclear warfare.

In Oklahoma, the primary responsibility for implementing the huge training program, which is aimed at eventually educating some 700,000 state citizens, has been assigned to the Oklahoma State Medical Association, the Oklahoma State Department of Health and the Oklahoma Civil Defense office.

Since county medical societies, county health officers and county civil defense personnel will be quarterbacking the actual instruction, the OSMA's Disaster Medical Care Committee has announced a half-day briefing session to be held at the OSMA headquarters on January 21st, beginning at 1:00 p.m.

Gifford Henry, M.D., Chairman of the medical association committee reports: "The committee feels this training program to be an extremely important milestone in civil defense preparedness, and worthy of enthusiastic endorsement at all levels of organized medicine. We hope the briefing session will have 100 per cent representation from county medical societies in order to get the program off to a good start."

16-Hour Course

The Medical Self-Help Training Program will be taught by the use of a special instructional kit, prepared by the Public Health Service in cooperation with the AMA and other groups. The complete program requires eight two-hour sessions, and is designed to be taught by non-professional instructors to groups of five to twenty-five persons.

Twelve subjects covered in the courses are: Radioactive Fallout and Shelter; Hygiene, Sanitation and Vermin Control; Water and Food; Shock; Bleeding and Bandaging; Artificial Respiration; Fractures and Splinting; Transportation of the Injured; Burns; Nursing Care of the Sick and Injured; Infant and Child Care; and, Emergency Childbirth.

A Question of Survival

The principle envolved in the mass training program is one of national survival. Defense experts state that a nuclear attack on this country today would kill about fifty million persons. On the other hand, an American population prepared for radiation-oriented first aid could probably cut the casualty list tenfold, and would have the capability to rise from the holocaust and successfully execute the balance of the war.

Following a major exchange of nuclear weapons, there will be a two to three week period of isolation, during which time American families will have to protect themselves from gamma radiation as well as take care of their own injuries and illnesses. The reorganization of medical services will be delayed by this "quarantine period," and professional health care will be only sparsely available.

Briefing Session

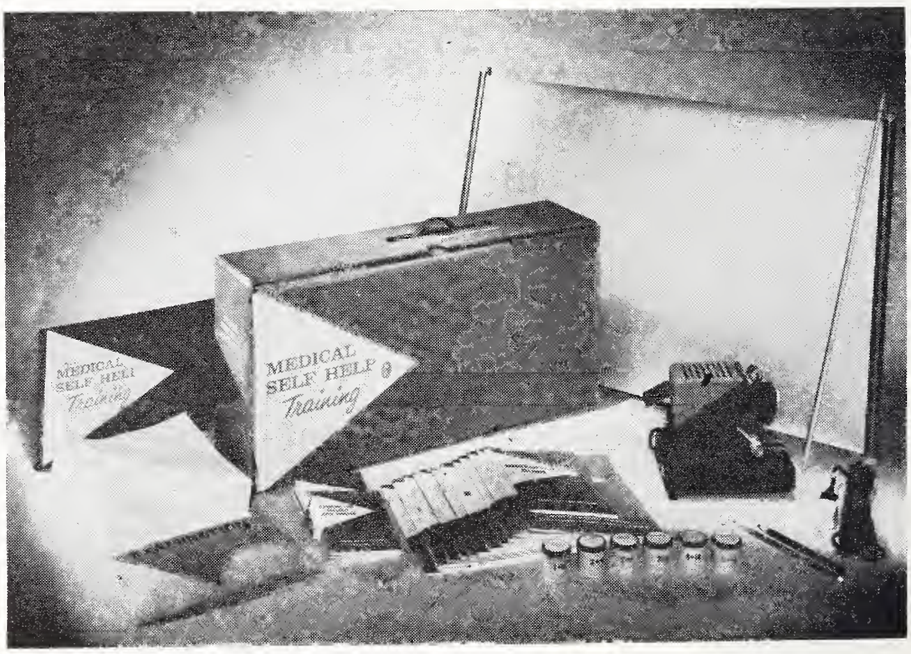
Invited to attend the Disaster Medical Care Conference on January 21st are presidents of county medical societies, chairmen of medical society civil defense committees, county health officers and local civil defense directors.

The three-hour program will contain presentations on "The Communist Mind," "Chemical, Biological and Radiological Warfare—U.S. and U.S.S.R. Capabilities," "The Medical Self-Help Training Program" (with demonstration of instructional kit), "The State Plan for Implementing the Self-Help Training Program," and, "Responsibility of County Medical Societies."

Appearing on the program will be: Gifford Henry, M.D.; General Clyde Watts (USA-Retired); Major Charles Dutreau (USA-Retired); David Steen, University of Oklahoma Extension Division; and, Tom Brett, Director of Oklahoma Civil Defense.

Following the presentations, information packets will be distributed to participants, containing complete details on the national, state and local plans of implementation, including sample press releases for county medical societies.

Registration will begin at OSMA headquarters at noon. □



Medical Self-Help Training Kit, with component parts on display.

OSMA Sponsors AAPS Essay Contest

For the third straight year, the OSMA Board of Trustees is offering financial support to the annual essay contest of the Association of American Physicians and Surgeons. State AAPS essay contest chairman J. F. Moorman, M.D., has been authorized to issue OSMA cash awards to first, second and third place winners of the state level contest, as well as to the teachers of the top two essayists.

The first place state winner will receive $100, the second prize is $50, and third is $25. The teacher of the first place winner will receive $50 and the teacher of the second, $25.

Free Enterprise and Private Care

Oklahoma's best three essayists will automatically have their papers entered in the national contest, where they will be eligible for $2,675 in national prizes.

All Oklahoma highschool students are eligible to submit 1500 word papers on either of two subjects: "The Advantages of Private Medical Care" and "The Advantages of the American Free Enterprise System Over Communism."

To assist students in preparing essays, the AAPS national office, located at 185 North Wabash Avenue, Chicago 1, Illinois, has prepared "packaged libraries" which are available as reference material to participating schools. Two to four of the libraries may be ordered for each school, depending upon the size of enrollment.

County Medical Societies Sponsor Local Contests

Several Oklahoma county medical societies have initiated sponsorship of the contest at the local level, and all others are urged to consider this program as a public relations project. To organize the contest in a county medical society, officers or designees (including Women's Auxiliary chapters) should first contact school authorities for official approval of the project. Then, cash prizes for county winners should be established by the medical society, schools should be furnished with packaged libraries, and publicity should be released disclosing full details of the county, state and national promotions.

Compositions should be original and well documented. Judging at all levels should be based solely on knowledge and grasp of the subject, supported with appropriate documentation and sound, logical conclusions. County medical societies should name a judging team to select the first three prize winners, and it is suggested that it be comprised of a physician, an educator, and one other person.

Timetable

The top three papers of each county should be sent to Doctor Moorman, 1200 North Walker, Oklahoma City, by March 15th, 1962, in order that state winners may be selected and their papers forwarded to the national contest by April 1st.

County medical societies may order sample packaged libraries and contest rules from the OSMA Executive Office, or by corresponding directly with the AAPS national office in Chicago. □

College of Surgeons Slates Clinical Meeting in Tulsa

Tulsa's new St. Francis Hospital will be the site of a clinical session scheduled by the American College of Surgeons on February 17th, from 1:00 p.m. to 5:00 p.m.

All members of the Oklahoma State Medical Association are especially invited to attend.

Sponsored by the Oklahoma Chapter of the College, the scientific program will be followed by a social hour and dinner, to which wives are invited. The location of the social aspects of the meeting will be announced later when the complete scientific program and related details are mailed to every physician in the state.

St. Francis Hospital is located at 61st and Yale, Tulsa. □

AMA Reorganizes AMEF

F. J. L. Blasingame, M.D., Executive Vice-President of the AMA, has announced the amalgamation of the American Medical Education Foundation with the American Medical Research Foundation. The AMEF was established in 1951 for the purpose of providing financial assistance to medical schools. AMRF was established in 1957 for broader purposes, including the provision of financial assistance to medical schools.

Effective January 1, 1962, the two programs will be consolidated within the framework of a single Foundation—the American Medical Association Education and Research Foundation. At the same time, these programs will be expanded and a concerted effort made to provide increased financial assistance to medical schools, in addition to financing the other projects of the Foundation.

The AMA-ERF

This Foundation is incorporated as an educational, scientific organization. All contributions to the AMA-Education and Research Foundation are tax deductible.

Programs of AMA-ERF

At the present time, the Foundation is seeking funds to support the following programs—

- unrestricted financial assistance to medical schools
- a medical journalism fellowship program
- a research grants program for medical research workers
- a study of perinatal mortality and morbidity
- a study of continuing medical education.

Fund-Raising

The AMA-ERF seeks financial support from physicians, constituent and component medical societies, the Woman's Auxiliary, philanthropic organizations, business entities, and the general public.

For the first ten months of 1961, Oklahoma's contributions to the program are $4,567.17, more than double the years contribution of 1960. □

GPs to Meet in Tulsa

Oklahoma's Chapter of the American Academy of General Practice has selected February 5 and 6, 1962 as the dates for its annual meeting to be held at the Hotel Tulsa in Tulsa.

Seven nationally known medical leaders will participate in the two-day scientific program at the 14th session. The annual banquet will feature guest speaker Floyd Bratt, M.D., President of the American Academy of General Practice from Rochester, Minnesota.

In addition to the scientific program, technical exhibits and social activities have been planned. Special entertainment has been arranged for the wives of attending physicians.

Speakers Named

Those appearing on the program and their topics will be: Robert Manning, M.D., Associate in Medicine, University of Kansas, "Liver and Jaundice" and "Testing of Liver Function"; Phillip Thorek, M.D., Associate Professor of Surgery, University of Illinois, "If I Had An Ulcer" and "Only an Appendix"; Richard T. Smith, M.D., Director of Medical Services, Merck, Sharp and Dohme and Associate Professor of Medicine, University of Pennsylvania, "Recognition and Treatment of Fibrositis" and "Recognition of Cervical Root Syndrome";

William C. Keettel, M.D., Chairman of the Department of Obstetrics and Gynecology, State University of Iowa, "Dysfunctional Uterine Bleeding" and "The Use of Prudendal Block and Pericervical Block in Obstetrics"; Leonard Fabian, M.D., Chairman of the Department of Anesthesiology, University of Mississippi, "Spinal Anesthesia" and "Respiratory Resuscitation"; H. William Clatworthy, M.D., Professor of Surgery, Ohio State University, "Surgical Emergencies in the Newly Born" and "Lumps in Kids"; and, Sol Wilner, M.D., Tulsa radiologist, "Bassal Interlobular Septal Lines on Chest Radiograph." □

Doctor Samuel T. Moore, right, new president of the Alumni Association of the University of Oklahoma School of Medicine, and the outgoing president, Doctor Wilburt F. Lewis.

Alumni Association Meets, Names Officers

Doctor Samuel T. Moore, Oklahoma City orthopedic surgeon, took office as president of the Alumni Association of the University of Oklahoma School of Medicine at the annual fall membership meeting, succeeding Doctor Wilburt F. Lewis, Lawton urologist.

The alumni expressed gratitude to the 1961 state legislature for responding to the needs of the Medical Center "to the full extent of present available revenue" and also resolved to redouble their efforts on behalf of the Ten Year Program for Medical Center development.

The Ten Year plan calls for $15 million in capital improvements. Toward this goal the last legislature appropriated $200,000 to be made available from surplus revenues for land acquisition.

Elected to serve with Doctor Moore were Doctor Wayne A. Starkey, Altus, vice-president; Doctor Robert W. Lowrey, Poteau, secretary; and Doctor Powell E. Fry, Stillwater, treasurer.

Association members revised the format for their 1961 meeting. Instead of a formal banquet and evening membership meeting, the business session was held in the afternoon preceding a cocktail party and smorgasbord dinner at the 89'er Inn in Oklahoma City on October 22. Class reunions en masse also were dispensed with but several five-year reunion classes held individual reunions during the annual meeting weekend which, as in past years, was scheduled prior to the Oklahoma City Clinical Society conference. □

Carl Puckett Memorial Lecture Planned

Clayton L. Loosli, M.D., Dean of the University of Southern California School of Medicine will be guest speaker for the third annual Carl Puckett Memorial Lecture to be held at the University of Oklahoma Medical Center Auditorium, Wednesday, February 7, 1962 at 4:00 p.m.

Doctor Loosli's topic will be "Histoplasmosis and other Mycotic Respiratory Diseases."

The program is sponsored by the Oklahoma Tuberculosis Association □

1962 Dues

New county medical society secretaries are being mailed packets of information to help them collect 1962 state and AMA dues and report their memberships.

In a covering letter, the secretaries are being reminded that both state and national dues have been increased for the first time in more than ten years. OSMA dues are up from $42 per year to $47, and the AMA's are being raised from $25 per year to $35.

Delegates Approve

The state dues increase came as a result of House of Delegates action last Spring, when it was decided to create a scholarship, loan and grant-in-aid program for medical students at the University of Oklahoma School of Medicine.

The extra $5 portion of dues will be deposited in a separate bank account, and will be paid out and loaned according to plans developed by the OSMA Financial Aid to Education Committee. Committee Chairman, Walter E. Brown, M.D., presented a complete report on the committee's activities in the December issue of the *Journal.*

AMA Delegates approved a two-stage dues increase at the 1961 annual meeting. Moving upward in $10 increments, the annual rate will reach $45 per year in 1963.

Monies derived from the dues hike will be used to inaugurate or expand the following programs:

- Financial assistance to medical students (AMA will soon offer 50 national scholarships, allocated geographically, and will establish a collateral fund to back up local bank loans to students).
- Continuing education for practicing physicians.
- Health advice to the lay public.
- Medical research.
- Expansion by the Communications division of its program of faithfully portraying the image of the AMA.

AMA officials point out that dues now support only 21% of AMA program. □

REGIONAL POSTGRADUATE COURSES ARE POPULARLY RECEIVED

Doctor R. R. Hannas' Committee on Postgraduate Education has now reached the halfway point in its series of eight regional postgraduate refresher courses, with programs successfully completed in Bartlesville, Enid, Chickasha and Burns Flat.

Scheduled for the remainder of the Spring are programs in Ardmore (January 30th—"The Kidney"), Ada (February—"The Colon"), Western Hills Lodge, (March—"The Colon"), and Miami (April—"The Lung").

All OSMA programs follow the same format—basic science, diagnostic and therapeutic aspects of principal organ systems. Designed to permit the busy practitioner to attend by sacrificing only nominal loss of time from his office, the programs begin at 4:30 p.m. and conclude around 9:30 p.m.

Dinner is included in the registration fee of $7.50. The American Academy of General Practice awards four hours Category I credit for the meetings.

The courses are taught by faculty members of the University of Oklahoma Medical Center.

Chickasha Meeting

Attending the Chickasha meeting on "The Kidney," held December 5th under the local direction of B. C. Chatham, M.D., were the following physicians: B. C. Chatham, M.D., Frank W. Clark, M.D., W. C. Click, M.D., Jack Foertsch, M.D., W. S. Harrison, M.D., R. E. Herndon, M.D., F. W. Hollingsworth, M.D., James P. Jobe, M.D., J. W. McDoniel, M.D., J. B. Miles, M.D., Lee Pullen, M.D., S. D. Revere, M.D., R. G. Stoll, M.D., Avalo V. Caldwell, M.D., W. W. Davis, M D., C. N. Talley, M.D., B. B. McDougal, M.D., Gerald L. Beasley, M.D., Samuel M. Davis, M.D., R. R. Hannas, M.D., and Doctors Robert Lindeman, John P. Colmore, and John W. Drake, instructors.

Burns Flat

With local arrangements made by Doctor Hannas, the Clinton-Sherman Air Force Base hosted physicians for a December 19th session on "The Liver." Attending were: Cooper D. Ray, M.D., Curtis B. Cunningham, M.D., K. E. Whinery, M.D., Ralph Simon, M.D., Ross Deputy, M.D., Dwayne Kelley, M.D., Floyd Simon, M.D., R. S. Srigley, M.D., L. G. Livingston, M.D., Aubrey E. Stowers, M.D., J. William Finch, M.D., M. Wilson Mahone, M.D.,

Ralph S. Phelan, M.D., Louis C. Belter, M.D., Van H. Howard, M.D., Arthur Grayson, M.D., Alex Shadid, M.D., James M. Bayless, M.D., F. W. Hollingsworth, M.D., A. L. Johnson, M.D., Edward Young, M.D., James R. Rhymer, M.D., Paul B. Lingenfelter, M.D., R. R. Hannas, M.D., Colonel Spencer A. O'Brian, (Medical Corps), and Doctors G. Rainey Williams, Jack D. Welsh, and J. William Hood, instructors.

Next Meeting—Ardmore

Lake Murray Lodge, Ardmore, will be the site of the next postgraduate course, "The Kidney," scheduled to be held at 4:30 p.m. on January 30th. Roger Reid, M.D., Ardmore, is in charge of local arrangements.

The program will be presented by Doctors W. O. Smith, Robert Lindeman, and John P. Colmore. Subject matter includes "Renal Functions," "The Kidney and Electrolytes," "Acute Renal Failure," "Pyelonephritis," and a problem case conference. □

Next Month—Heart Issue

Ben H. Nicholson, M.D., Editor-in-Chief of the OSMA *Journal*, has announced plans to devote the entire scientific section of the February issue to the subject of heart disease. Coordination of the special publication has been carried out by Thomas N. Lynn, M.D., Editor of the *Journal's* regular feature, "The Heart Page."

This effort marks the second time in recent months that special "reference-issues" have been produced, the last time in May, when a civil defense number was published. □

MISCELLANEOUS ADVERTISEMENTS

SOUTHERN OKLAHOMA group desires young general practitioner for association, leading to partnership. Write Key B, The Journal, P.O. Box 9696, Oklahoma City, Oklahoma.

G.P. WANTED: General practice clinic in Oklahoma City metropolitan area. Salary plus percentage. Give training, experience and religion first letter. Box 183W, Oklahoma City, Oklahoma.

LOCATION WANTED: Graduate of Georgia, 1958, 31 years old, married, have completed three years of approved residency in OB-GYN, presently serving as Chief Resident at Baroness Erlanger Hospital, Chattanooga, Tenn. Contact Robert J. Henderson, Jr., M.D., 3632 Weldon Drive, East Ridge, Tenn.

WANTED PARTNER or associate, with chance to eventually retire, for general practice in city. $20,000 income, average daily load 15-20, same location for 20 years. General practitioner, either recent graduate or middle age, who could do O.B. and minor surgery would do well. All records available. Mary Edna Sippel, M.D., 308 Utica Square Medical Center, Tulsa 14, Oklahoma.

GENERAL PRACTITIONER wanted. Hollis, Oklahoma, County seat of Harmon County, wants general practitioner. Physicians interested in this Southwestern Oklahoma opportunity should contact the President of the Chamber of Commerce, E. A. Story, Route 4, Hollis (MU 8-2703.).

PHYSICIAN doing internal medicine desires to dispose of practice. Office located in prominent medical building in town of over 100,000 population in Oklahoma. Contact Key L, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

DESIRE LOCATION in OB-GYN, available July, 1962, board eligible, age 28, married. Contact Gregory A. Green, M.D., 1923 South Utica, Tulsa, Okla.

SURGEON DESIRES practice opportunity in Oklahoma. Graduate University of Virginia, 1952, Board Certified. Residency training at Sloan-Kettering Institute, University of Virginia Hospital and Lahey Clinic, Boston. Contact Euclid Murden Hanbury, Jr., M.D., 1500 Amherst Street, Charlottesville, Virginia, Telephone 6-1000.

OFFICE SPACE FOR RENT. Medical or Dental. Air conditioned. Reasonable rent. Hospital area. 436 N.W. 13th, Oklahoma City. Call (days) CE 5-6461.

* * *

Complimentary space available to members for three consecutive months. For non-members, the rate is $5.00 each month for each inch of copy or fraction thereof.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street

Oklahoma City, Oklahoma

LETTER TO THE EDITOR

To The Editor:

The Pediatric Service, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, is participating in a cooperative study concerning the treatment of acute leukemia and solid tumors in childhood. Several teaching hospitals in the Southwest have joined together to form the Southwest Cancer Chemotherapy Study Group in order to accumulate experience in the management of these diseases. This study is not designed to test experimental agents but rather to accumulate data concerning the comparative effects of proved anti-neoplastic therapy in order to draw conclusions as to the preferable means of therapy in these disorders.

The cooperative study concerning solid tumors includes children with lymphomas, Wilm's tumors, neuroblastoma, bone tumors, brain tumors, soft tisue sarcoma, and other solid tumors.

The chemotherapeutic agents will be supplied free to the patients.

All patients will be returned to their referring physician after the study.

Arrangements for these patients can be made by telephoning or writing the Department of Pediatrics, Children's Memorial Hospital, University of Oklahoma Medical Center, 800 N.E. 13th, Oklahoma City, Oklahoma, telephone CE 6-1366.

Many thanks in advance.

Sincerely,

HARRIS D. RILEY, Jr., M.D.
Professor and Head
Department of Pediatrics

Mrs. Pat Fite, Sr., President, announces January 15, 1962, as the date for our extremely important *Mid-Winter Board Meeting.* Held at the State Medical Building, Oklahoma City, at 9:30 a.m., business and reports will be followed at 1:00 p.m. by luncheon at the Thunderbird. Mrs. Fite says, "This will be, as a board, our most important meeting of the year." If you are a state officer, state chairman, county offices, county chairman—or a conscientious auxiliary member not holding an office of any kind; you are most welcome.

Those of us with vital interest in *Legislation* based on welfare trends view with interest the statement by Secretary Ribicoff to the effect that sweeping reforms are under way to "give youngsters an incentive to work and avoid perpetuating chronic dependency into second and third generations." In the light of each definitive report and each statistical average in those countries now "flourishing" under systems of socialized medicine, how would our Secretary confine medical care to one generation, or realistically curb abuse incipiently?

For several years we have been listing suggestions and championing the importance of diversified reading. This is often not just to enable us to be well-informed wives of doctors, but to be able to skim the cream off the bottomless container of pertient information. Quite often this reading is not directly connected with the study of medicine, but related to it.

In his article in the recent *The Doctor's Wife,* Leonard W. Larson, M.D., President of the AMA, lists qualifications he deems important in the wife of a physician. He says: "She can assist him (the doctor) with extra reading, increase her own knowledge of medical affairs, and relieve her husband of many tedious hours of late-night reading. My wife, Dee, has done this by watching the newspapers and lay magazines and clipping articles that she feels would be of interest to me. You might say that she has become my private librarian."

Reading *Needed: Whole Men, Not Fractions,* by Claude Coleman, in a recent New York Times Magazine, we kept thinking with what enthusiasm the late Don Branham, M.D., would have agreed with the author on many points. Together with E. E. Shircliffe, M.D., Doctor Branham firmly believed that every physician necessarily neglected important reading, during pre-med, training, and later professional life. In an attempt to supplement the program, he and Doctor Shircliffe conducted weekly seminars. Among these basic readings, he listed: Willard L. Sperry's *Ethical Basis of Medical Practice;* George Bernard Shaw's *The Doctor's Dilemma;* and William Osler's *Introduction to the Profession of Medicine.* Are they in your library?

Many doctors have recommended inclusion of a course of philosophy of medicine in recent articles, emphasizing many of the points made by Doctor Branham. We asked one young pediatrician what single book he would consider essential for doctors—and their wives—to read. His answer, unhesitatingly, was Jacques Barzun's *House of Intellect.* (If your husband is too busy to read it, underscore significant observations. He will become so interested that he will read the entire book.)

We are faced with a brand new year. Let us do all that we can as doctors' wives to make it a rewarding year, in our homes, our communities, and by active participation in our own Medical Auxiliary. It is not our duty; it is our privilege. □

OSMA JOURNAL / *the last word*

Oklahoma's long-sought Medical Examiner Act was put into effect on January 2, when Governor Edmondson named W. Floyd Keller, M.D., Oklahoma City pathologist, as temporary State Medical Examiner. Doctor Keller is now completing the appointments of physicians to serve as county examiners.

Thomas C. Points, M.D., Oklahoma City obstetrician-gynecologist, has been appointed to a three year term on the AMA's Committee on Maternal and Child Care. The group also serves as the Advisory Committee to the American Medical Research Foundation's National Perinatal Study.

First Call For Hobbies! Mrs. C. L. Oglesbee, Muskogee, Chairman of the Annual Hobby Show, is now seeking applications from physicians and wives who wish to display their hobbies and handicrafts at the 1962 annual OSMA meeting. Awards will be given in various categories, with details to be announced later. Mrs. Oglesbee may be contacted at 2601 West Broadway, Muskogee.

OMPAC, Oklahoma Medical Political Action Committee, was born January 6th, when a group of physicians and their wives representing most sections of the state assembled for an organizational meeting at Oklahoma City's Skirvin Hotel. The state group will be affiliated with AMPAC, the national activity approved by the AMA. OMPAC's purpose will be to coordinate the political activities of Oklahoma doctors and to provide liaison and assistance to the national organization. Oklahoma physicians, wives and friends will be organized by Congressional Districts.

Representatives of state medical associations will meet in Chicago on January 26th and 27th to discuss state plans for coordinating opposition to the forthcoming attempt to add health care benefits to the Social Security Act. Attending from OSMA will be Thomas C. Points, M.D., Chairman, Federal Legislative Committee, and Don Blair, Associate Executive Secretary.

County societies will soon receive the first six in a series of public service newspaper ads from the AMA. It is being suggested that the local medical groups purchase advertising space for the messages on "Choosing A Family Doctor," "Medical Society Grievance Committees," "Doctor-Patient Relationship," "Why M.D.'s Promote Immunization," "Medicine's Traditional Guarantee of Care For All," and "Cost of Medical Care."

Speaker of the House of Delegates Marshall O. Hart, M.D., Tulsa, reminds county medical society officers that resolutions for the 1962 annual meeting must be at OSMA headquarters by April 5th (thirty days prior to the House of Delegates meeting on May 5th). "Resolutions from counties form the base of official OSMA policy," Doctor Hart states, "and I hope we will have a large number and variety offered for consideration."

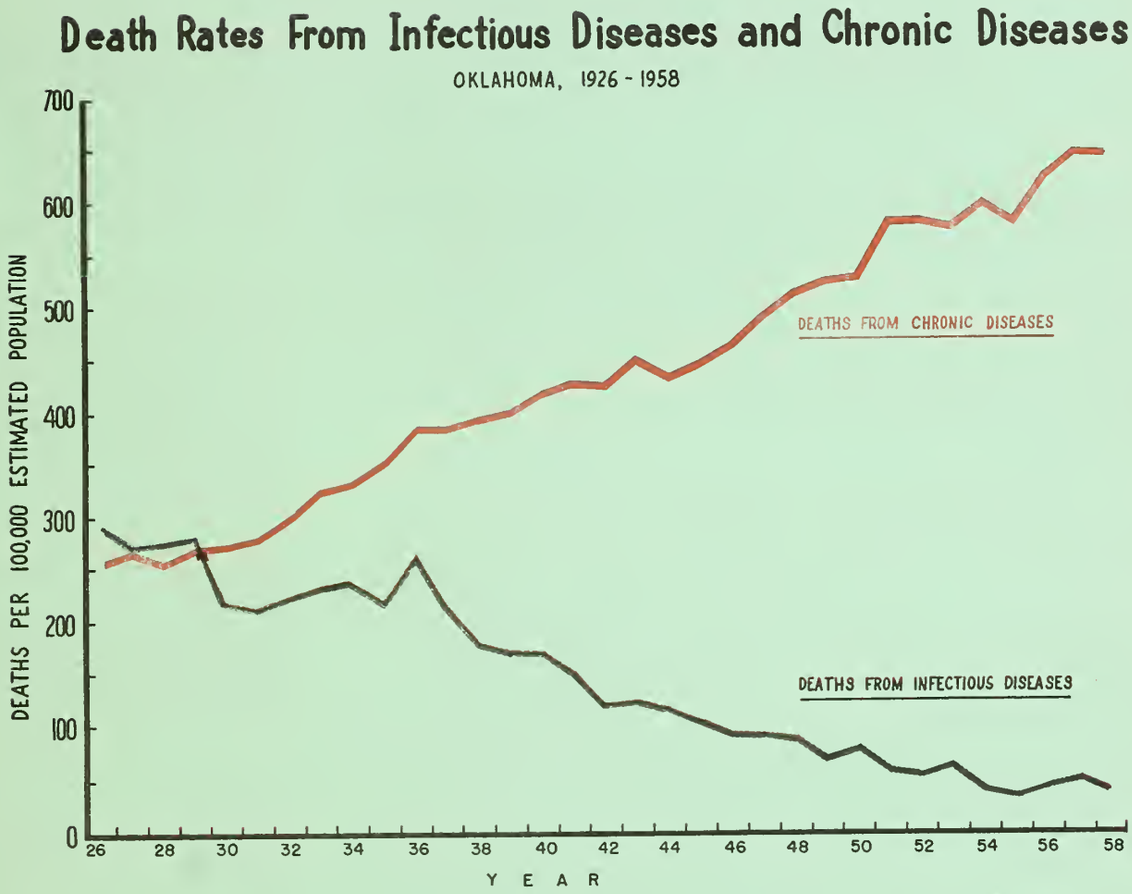
MEETINGS

January 21	Disaster Medical Care Conference (pg. 34)
January 30	OSMA PG Course ("The Kidney") Lake Murray Lodge (pg. 22)
February 5, 6	Okla. Chapter, AAGP, Annual Meeting, Tulsa (pg. 36)
February 14	OU Short Course ("Malignant Neoplasms") Medical Center
February 17	American College of Surgeons, Clinical Meeting (pg. 35)
April 2-5	SW Surgical Congress Annual Meeting, Western Skies Hotel, Albuquerque
April 9-20	Heart Patient Course, Medical Center
May 5-7	OSMA Annual Meeting, Oklahoma City

NEWSLETTER

OKLAHOMA STATE DEPARTMENT OF HEALTH
OKLAHOMA CITY, OKLAHOMA

January 1, 1962



OKLAHOMA

"Death Rates from Infectious Diseases and Chronic Diseases"
Oklahoma, 1926-1958

1. Statistics are available for death rates in Oklahoma since 1926.
2. In 1926 death rates for infectious diseases exceeded death rates for chronic disease.
3. Improved medical care, new drugs, widespread immunization programs, better environmental service have reduced the infectious disease rate to not more than one-sixth of the 1926 rate.
4. These very same factors have enabled our population to survive - and more citizens are enjoying a greatly increased life span.
5. One of the results has been greatly increased health problems in the chronic disease field.
6. Chronic diseases are more prevalent in the older age group, account for much of the hospitalization, often are responsible for disabling conditions, and many patients require long periods of medical supervision.

(A SUPPLEMENT TO THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION)

The JOURNAL of the Oklahoma State Medical Association

FEBRUARY 1962
Vol. 55/No. 2

EDITORIAL BOARD

BEN H. NICHOLSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

C. B. DAWSON, M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

CLINTON GALLAHER, M.D.
President

J. HOYLE CARLOCK, M.D.
President-Elect

PETER E. RUSSO, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DICK GRAHAM
Business Manager

DON BLAIR
Associate Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

scientific

The Cases For and Against Anticoagulants in Coronary Heart Disease, Introduction, *Thomas N. Lynn, Jr., M.D.* . . . 39
The Case for Using Anticoagulants Following Acute Myocardial Infarction, *Gerald L. Honick, M.D.* . . . 40
The Case Against Using Anticoagulants Following Acute Myocardial Infarction, *Ralston R. Hannas, Jr., M.D.* . . . 43
Long Term Oral Anticoagulants in Myocardial Infarction, *Wiley T. McCollum, M.D., F.A.C.P.* . . . 46
Long Term Anticoagulant Therapy in Myocardial Infarction, *Loyal L. Conrad, M.D.* . . . 49
Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris, *Galen P. Robbins, M.D.* . . . 51
The Case Against the Use of Anticoagulation in Angina Pectoris, *W. W. Rucks, Jr., M.D.* . . . 55
The Use of Anticoagulants in Impending Myocardial Infarction, *John J. Donnell, M.D.* . . . 58
The Case Against Anticoagulation in Coronary Insufficiency, *William F. Ewing, M.D.* . . . 61
A Brief Critique, *Leon C. Freed, M.D.* . . . 63

news

AMA-Blue Shield Offer Insurance Plan . . . 54
Professional Education Through Television at Home . . . 62
OSMA Launches Intensive Campaign Against H.R. 4222, the King-Anderson Bill . . . 64
Annual Meeting Features Americanism . . . 65
Oklahoma Medical Political Action Committee—"OMPAC" . . . 66
Ribicoff Names Carlock As Advisor on Aging . . . 66
One Hundred Attend "Self-Help" Conference . . . 67
Oklahoma's Poison Information Programs . . . 67
Regional Postgraduate Courses Continue To Be Popular, Ada Meeting Next . . . 68
Two Oklahoma Physicians Honored . . . 69
Deaths . . . 70
Miscellaneous Advertisements . . . 70
Woman's Auxiliary . . . liii
The Last Word . . . liv

In oral penicillin therapy

COMPOCILLIN-VK

offers the speed, the certainty,

the effectiveness

of this...

with the safety

and the convenience

of this...

OSMA JOURNAL/scientific

The Cases For and Against Anticoagulants in Coronary Heart Disease

Introduction

THOMAS N. LYNN, JR., M.D.*

THE TREATMENT of coronary heart disease with anticoagulants is a frequent topic in medical meetings, hospital conferences and hospital corridor conversations. Much sound and fury has been expended in discussions of such things as "antiprothrombin" group of drugs versus heparin; long term anticoagulation versus short term anticoagulation; whether the prothrombin activity should be kept at 15 per cent versus 20 per cent and whether or not pericardial friction rubs constitute a contraindication to anticoagulation. This consternation is not surprising considering that there is no unanimity of opinion regarding the value of anticoagulation as a form of therapy for many of the syndromes surrounding coronary heart disease.

There are those who would have us believe that a drug named warfarin is a panacea for any of the ills of man caused, even remotely, by thrombus formation however, there are probably an equal number who insist that this agent has its greatest value as rodenticide. It is obvious that the final chapter has not yet been written. Probably many of the questions centering about the use of these agents will be at least partially resolved by rigidly controlled clinical studies and by studies now in progress on the structure and function of normal and diseased coronary arteries, atherogenesis and thrombogenesis. These results of these investigations however, are most likely years in the future, and the problem remains with us at present.

We have asked several physicians, skilled in the practice of cardiology to review impassively for us what actually is known about the value of anticoagulant agents in four clinical situations:

(1) "Acute" Myocardial infarction; (2) "Arteriosclerotic heart disease" with remote myocardial infarction; (3) "Impending" myocardial infarction and (4) Angina pectoris without known myocardial infarction. At our insistance, they have taken a "pro or con" approach to the above topics and their writing may not reflect their own opinions, but be a summary of the cumulative evidence defending or supporting the stand which they were asked to take.

The readers of this journal have an equally important task; to read and digest the contents of this section and evaluate the evidence themselves. It is only in this manner that light may replace the "sound and fury." □

*Assistant Professor, Department of Preventive Medicine and Public Health, Instructor, Department of Medicine, University of Oklahoma Medical Center, Oklahoma City, 4, Oklahoma.

The Case For Using Anticoagulants Following Acute Myocardial Infarction

GERALD L. HONICK, M.D.

DURING THE PAST ten years, anticoagulant therapy has been used widely in the treatment of patients with recent myocardial infarctions. The basis for this therapy resulted from a report of the American Committee for the Evaluation of Anticoagulant Treatment[1] who state the following results: In over 1000 patients, the mortality rate was 23 per cent in the control group compared with 16 per cent in the anticoagulant group.

The incidence of embolic complication was 26 per cent in the control group compared with 11 per cent in the anticoagulated group. It seems that the greatest benefit from the anticoagulants during acute myocardial infarction is the prevention of thromboembolic complications usually aggravated by prolonged bed rest. Pulmonary emboli were found in 23 per cent of the control patients and eight per cent in the treated patients. There seems to be a higher incidence of thromboembolic complications than one would suspect, clinically. For, at autopsy, when only 16 per cent were thought clinically to have thromboembolic complications, 43 per cent were actually found. Of those who were treated with anticoagulants when only 10 per cent were suspected, 27 per cent were found at autopsy. Mural thrombi were found in 62 per cent of control patients compared with 32 per cent of treated patients.

In this same study, it was found that there was no difference between the two groups regarding incidence of new infarctions or extension of coronary thrombosis, suggesting little change of the coronary circulation and prevention of further extension of the coronary thrombosis with anticoagulant therapy.

Studies have been reported regarding which patients should or should not be anticoagulated. Russek and Zohman[2] think that "good risk" cases need not receive anticoagulant therapy. In order to be in the good risk category, a patient must have had no prevous infarction, no intractable pain, extreme or persistent shock, significant cardiac enlargement, gallop rhythm, congestive heart failure, auricular fibrillation or flutter, ventricular tachycardia, or intraventricular block, diabetic acidosis or other states pre-

disposing to thrombosis. Since the mortality rate is 3.5 per cent and the 3.7 per cent thromboembolic rate in the so-called good risk group, they think the dangers of anticoagulant therapy outweigh this mild risk. This is in distinct contrast to those in the poor risk category in which the mortality rate was 60 per cent and the thromboembolic rate of 10 per cent. Russek thought that a patient with acute myocardial infarction should be observed for 48 hours before placing the patient in a good or poor risk category. Others think that it is impossible to be certain which category patients will eventually be in at the end of the first 48 hours, for 25 per cent are later clinically changed from a good to poor risk category.[3] Another argument for not waiting 48 hours to start anticoagulant therapy is that in some cases of acute myocardial infarction, mural thrombi have been present by the third day. Separation of patients into good and poor risk categories can be done accurately only at the time of discharge from the hospital.

The dangers of hemorrhagic complications from anticoagulant therapy are ever present. Cardiac rupture and hemopericardium are twice as frequent during anticoagulant therapy. However, the incidence is so small that many think this risk must be accepted.

With oral anticoagulants, one must decide what is the best index of therapy. The Quick one-stage prothrombin time has been the most popular since it is realtively simple to do. But is this test a true index of therapy and is the patient actually being adequately protected against thromboembolic or hemorrhagic complications? All of us have observed patients thought to be under ideal laboratory control, who developed thrombosis. At other times, patients whom we thought were receiving an inadequate dosage of drug had hemorrhagic complications. At the present time, in an attempt to solve this dilemma, we do prothrombin times, Lee White clotting times, and Thrombotests (Owren) are being done simultaneously in order to better regulate the dosage. Unfortunately, even using this combination, hemorrhagic complications occasionally occur in spite of better laboratory control by this method. By this combination of tests, one also observes that, although the prothrombin time may be at a therapeutic level in 48 hours after starting therapy, the clotting time is frequently within normal range; therefore, it has been our practice to continue Heparin for at least a week after beginning anticoagulant therapy, then the clotting time can be raised to twice normal by oral anticoagulants.

A word of caution must be mentioned regarding termination of anticoagulant therapy. It has been reported that sudden withdrawal of anticoagulant therapy produces a "rebound" in which there is greater tendency for the patient to have thrombosis. In the series of Bjerkelund[4] and the British Medical Research Council[5] it was reported long term anticoagulant therapy was of the greatest benefit during the first six months of therapy. Thus, it is quite possible that the greater incidence of thrombosis in the control group during the first six months was due to withdrawal of the anticoagulant drug. It is generally thought that the ideal way to withdraw the patient is to taper off the drug very gradually over a period of two to four weeks.

One of the most recent comparative studies regarding anticoagulant therapy during acute myocardial infarction was done by Conrad and Rothermich.[6] Over a fifteen year period they found that thromboembolic complications were present in 5.5 per cent of patients receiving adequate anticoagulant therapy, 17.6 per cent in those receiving inadequate therapy and 19.5 per cent in those receiving no drugs. Therapy was considered adequate when the prothrombin time of less than 30 per cent during at least 70 per cent of the time. The incidence of death attributed to thromboembolic complications was 1.4 per cent in the treated group compared to 4.9 per cent in the control group. The

---

Gerald L. Honick, M.D., graduated from the University of Oklahoma School of Medicine in 1953 where he is now Clinical Assistant in the Department of Medicine. He is also Attending Physician in Medicine at the Veterans Administration Hospital in Oklahoma City. His practice is limited to his specialty, caridology.

Doctor Honick is a members of the Oklahoma Society of Internal Medicine.

mortality rate for those receiving anticoagulants was 3.4 per cent in the good risk category compared to 21 per cent in the control group. In the poor risk category, the mortality rate was 26 per cent in those treated compared to a mortality rate of 56 per cent not treated. They thought that there was approximately twice as great a mortality and twice as many thromboembolic complications in the control group as compared to those in the treated group, not only in the poor risk category but also in the good risk category. The above data confirms the original recommendation of the American Committee who advocate anticoagulants in all patients with acute myocardial infarctions.

SUMMARY

An attempt has been made to summarize the difference in mortality and thromboembolic complications when comparing patients treated and those not treated with anticoagulant therapy. The problems of ideal therapeutic control have been discussed. □

REFERENCES

1. Wright, I. S., Marple, C. D., and Beck, D. F.: (Report of the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction). Myocardial infarction, its clinical manifestations and treatment with anticoagulants. Grune and Stratton, New York, 1954.
2. Russek, H. J., and Zohman, B. L.: Selection of patients for anticoagulant therapy in acute myocardial infarction. Am. J. M. Sc. 228: 133, 1954.
3. Halpern, M. M., Lemberg, L., Belle, M., and Eichert, H.: The selective use of anticoagulants in acute myocardial infarction based on initial prognosis. Ann. Int. Med. 41: 942, 1954.
4. Bjerkelund, C. J.: The effect of long term treatment with dicoumerol in myocardial infarction. Acta. Med. Scand. 158, suppl. 330, 1957.
5. Pickering, S., Arnott, W. M., Biggs, R., Fullerton, H. W., Gilchrist, A. R., Hunter, R. B., Reid, D. D., Wood, P., Wright, J. H., and Douglas, A. S.: An assessment of long term anticoagulants administration after cardiac infarction. Brit. M. J. 1: 5125, Mar. 28, 1959.
6. Conrad, F. S., and Rothermich, N. O.: A clinicopathological study of acute myocardial infarction and the role of anticoagulation therapy. AMA Arch. Int. Med. 103: 421, 1959.

437 N.W. 12th, Oklahoma City, Oklahoma

℞ All OSMA Members

You look a little peeked. Need a break! Come to your '62 Annual Meeting.

What's in it for you? Everything. Big time vesting firemen and local hotshots c̄ superlative scientific savvy; a dose of ol' fashioned Americanism; invigorating discussions of Tax and legal problems, investment angles; exercise and nourishment at The Inaugural Ball; and other beneficial side effects, like no telephone around.

It's at the Skirvin Hotel, May 5-7. See you there — Plenty good medicine!

The Case Against Using Anticoagulants Following Acute Myocardial Infarction

RALSTON R. HANNAS, JR., M.D.

Adequate double blind studies have not yet been reported. The placebo affect is considerable. There are better placeboes. Mode of action is uncertain. Other methods are available.

SO GENERALLY ACCEPTED by cardiologists in Oklahoma is the use of anticoagulants in treating acute myocardial infarction that the person organizing this symposium had difficulty finding cardiologists to assume the responsibility for authoring an article questioning their use, the implication being that to think differently than the masses would curry colleague condemnation. However, mere acceptance by masses today does not mean that tomorrow the same masses will not discard this therapy as unreasonable. Medical history contains many familiar examples of such a modification of concepts.

The obvious objection to the use of anticoagulants in treating myocardial infarction is the constant danger of bleeding episodes. Before taking up this facet in greater detail, there are some more basic considerations which must be reviewed.

Of primary interest is the process of myocardial infarction. Do patients who survive acute myocardial infarction indeed have thromboses? Pathologists may see thromboses in the hearts of patients who have *died* of acute myocardial infarction, but since survival apparently depends on the establishment of adequate collateral circulation to the area of the infarction,[1] it would appear reasonable that survivors have either no thromboses or so little thromobsis that the development of adequate collateral circulation is not prevented. As long as pathological examination of human heart tissue is limited as it is to the study of autopsy material, the question of when thrombosis occurs in acute myocardial infarction will remain unclarified. This is an important and basic consideration because we are told that anticoagulants are effective in preventing the extension of existing thromboses—and it is possible that in patients surviving acute myocardial infarction thrombosis is not the real problem.

Even in those studies reporting success in the use of anticoagulants in treating myocardial infarction, results obtained in treated women have not been generally more favorable than in women untreated.[4] Are we

indeed to believe that the process of myocardial infarction in women is different than in men, different to the degree that anticoagulants are not effective? Do anticoagulants not affect the clotting mechanisms in women? Is it possible that the reported success of anticoagulants in male infarction is due to properties other than anti-clotting effects (particularly when many reports of success with anticoagulants are with less than the generally accepted effective blood levels necessary to prevent clotting)? This basic question, the apparent difference in response between women and men to anticoagulant therapy following myocardial infarction has led several groups to initiate treatment of male patients suffering from this illness with estrogen and/or other female hormones or hormone-like substances. Though conclusive reports are not yet available the initial results appear favorable, and certainly the complications of possible severe bleeding episodes may be avoided. An additional and perhaps even more beneficial effect has been noted in male patients treated for long periods with these female hormones —that of quite apparent decrease in atherosclerosis,[2] and this gets at one of the underlying *causes* of myocardial infarction (as contrasted to treating an *effect*—such as thrombosis). It is also interesting to note that priapism without demonstrable thrombosis has responded to anticoagulant therapy,[3] the implication drawn by the author being that perhaps the anticoagulant acted as an estrogenic substance or as an antagonist to androgens. Obviously more observations are needed to confirm this.

Medical pragmatists have said they use anticoagulants in the treatment of acute myocardial infarction because they are effective, but are they? The facts are that *adequate* double blind studies using anticoagulants and placeboes have not yet appeared in the literature. In any disease in which the central nervous system plays a role, the placebo effect of any medication must not be underestimated. To those who doubt the role of the central nervous system in coronary artery disease and myocardial infarction we need only point to the excellent work which has been done in the field of psychosomatic medicine relating stress, particularly emotional, to coronary disease,[6] and to as yet not too well publicized experiments on certain laboratory animals in which stimulation of particular areas of the brain was followed by markedly increased atherosclerosis. To those who doubt the possibilities of placebo effect when using anticoagulants, remember that there are more pills to take, more visits to the physician, the physician himself exudes more confidence because he believes that his potion is potent, and there are necessarily more laboratory procedures (themselves more reassuring in a wonderful witchery way). It would behoove us to remain sceptics in the use of any medication until adequate controls and double blind studies have been performed.

Turning to the dangers of hemorrhage when levels of anticoagulants sufficient to reach therapeutic blood levels are maintained, if we are only providing a placebo with this medication there are certainly less dangerous placeboes available. The medical literature is replete with reports detailing the numerous severe bleeding episodes which have occurred. A British writer who strove diligently to maintain effective blood anticoagulant ranges reported that 48 per cent of his patients (in a large series) had one or more bleeding episodes, though not all severe.[5] There would undoubtedly be more such reports but for the fact that many, if not most patients carried on anticoagulants are not maintained with a sufficiently prolonged prothrombin time for effective anticoagulation—as a safety precaution at times and in ignorance at others. Complicating

---

A 1950 graduate of Harvard Medical School, Ralston R. Hannas, Jr., M.D., is now Instructor in Medicine at the University of Oklahoma School of Medicine in addition to his general practice in Sentinel, Oklahoma.

He is a member of the Oklahoma Chapter of the American Academy of General Practice, the Board of Contributing Editors of The Journal of the Oklahoma State Medical Association and Director of the Southwestern Oklahoma Frontiers of Science. In addition, he is Chairman of the Council on Professional Education for the state association and an OSMA Trustee.

this phase of the problem is the fact that our present laboratory methods used in measuring the effects of anticoagulants are at best clumsy. Refinements in these techniques, however, continually are being made, but more technical improvements are needed.

Therefore, to summarize, in treating acute infarction patients, it would seem advised to give them as much personal attention as if they were being treated with anticoagulants, and such psychotherapy as is indicated; to use vasodilators, sedation, oxygen, and bed rest liberally; to reserve the use of estrogenic substances in male patients to the time when the bulk of the evidence finally favors this therapy; and to reserve the anticoagulants for more proven use—that of a rat poison.

BIBLIOGRAPHY

1. Blumgart, H. L., et al: The Experimental Production of Intercoronary Annastomoses and their Functional Significance. Circulation 1: 10-27, (Jan.)1950.
2. London, W. T., et al: The Effect of Estrogens on Atherosclerosis. Annals of Int. Med. 55: 63-69 (July) 1961.
3. Oldfield, J.: Management of Primary Priapism. Brit. Med. J. 5161: 1227-1228 (5 Dec.) 1959.
4. Lieberman, J. S., and Wright, I. S.: The Status of Long Term Anticoagulant Therapy for Coronary Heart Disease. Progress in Cardiovascular Diseases 3: 43-55 (July) 1960.
5. Fuller, J. A.: Experiences with Long Term Anticoagulant Treatment. Lancet 2: 489-492 (3 Oct.) 1959.
6. Russek, H. I.: Emotional Factors in Atherosclerosis. Geriatrics 14: 479-482 (Aug.) 1959.

Sentinel, Oklahoma

And a HAPPY HOBBY TO YOU, too! This year the doctors have kindly invited their wives to bring along their hobbies to the Convention.

So, Doctor, please take this home to your wife and give her the responsibility for getting your display ready.

If your hobby is too big or if it is alive, how about some pictures of it?

DOCTOR'S HOBBY SHOW

OSMA Annual Meeting

Skirvin Hotel

Oklahoma City

May 5, 6, 7, 1962

Application for Hobby Show Space

56th ANNUAL MEETING

OKLAHOMA STATE MEDICAL ASSOCIATION

DESCRIBE EXHIBIT, including information as to size, shape and value (insurance is provided):

IMPORTANT: Deliver exhibit to Skirvin Hotel after noon, May 4. Your exhibit will be personally attended and insured at all times. It must be picked up by noon May 8th—NO LATER!

AUXILIARY MEMBERS — report to your local Hobby Chairman what you will exhibit. Recognition will be given to counties, and to members at large. Mail this form today! Applications close April 25th.

MAIL TO:

Mrs. C. L. Ogelsbee
2601 West Broadway
Muskogee, Oklahoma

Long Term Oral Anticoagulants in Myocardial Infarction

WILEY T. McCOLLUM, M.D., F.A.C.P.

The author is satisfied with his experience in the use of anticoagulants

LONG TERM oral anticoagulant therapy in myocardial infarction is definitely indicated. There is a marked decrease in mortality and morbidity and life is significantly prolonged. Most limitations previously imposed on the cardiac patient can now be discarded.

One of the criticisms by a "few physicians" has been that well documented studies with controls have not been reported. On the contrary, several have been reported and one of the most available in American Journals is that of Manchester.[1]

In this study, 204 patients were treated with anticoagulants (dicumarol and sintrom) for 1064 patient years and 200 patients served as controls and were treated with a placebo (ascorbic acid) for 808 patient years. Except for the use of oral anticoagulants, both groups received the same medical care, dietary regimen, digitalis, diuretics and sedatives prescribed by the same physicians. Any patient who failed to have a prothrombin time at least once a month or who discontinued the placebo or the anticoagulant was rejected from the study. The number of patient visits, prothrombin times, selection of patients, etc., were identical in both groups. An additional 304 patients were excluded from the study who did not meet these criteria. All patients had acute myocardial infarction when included in the study. The mean age, sex distribution, incidence of previous infarction and whether they were classified as "poor" or "good" risk coronary patients were the same in both groups. One exception was that patients previously digitalized in the control groups were slightly more than two times that of the anticoagulant group.

The number of deaths from recurrent myocardial infarction, congestive heart failure and other thromboembolic complications in the anticoagulant group was one-sixth that of the control group. Specifically, recurrent myocardial infarction was 2.5 times less and congestive heart failure almost two times

less frequent in the anticoagulant group. All other thromboembolic complications (cerebral and pulmonary embolism, phlebitis, etc.) occurred three times less frequently. Bjerkelund[2] and the British Medical Research Council[3] reports support these findings.

For comparison, Likoff, Bender and Dreifus[4] reported the fate of 100 patients with "mild" coronary disease. Most had ischemic coronary heart disease ("coronary insufficiency") and did not have myocardial infarction. These patients were not treated with anticoagulants. Even though these were "mild" cases by most criteria, 25 per cent were dead in one year, 60 per cent were dead in ten years and less than one-half returned to normal activity without subsequent manifestations of coronary insufficiency. Too, this is the group frequently referred to as having "only" an initial (hospital) mortality of two to eight per cent!

Personal experiences[5] have been similar to that of Manchester in the treated patient and Likoff, et al., in the untreated patient. In a group of 200 patients with myocardial infarction treated with oral anticoagulants and the other usual cardiac medications for more than 400 patient years there was only one death in each 30 patient years of treatment and less than 15 per cent readmitted to the hospital for all thromboembolic complications including recurrent myocardial infarction. These patients when readmitted were in the hospital for only 7.5 days, returned to part time work in less than one month and to full time work in less than two months. These patients were unselected and had previously experienced the usual complications of myocardial infarction (shock, congestive heart failure and arrhythmias) and had the same complicating diseases (obesity, hypertension and diabetes) as all coronary patients. Minor "criticisms" of anticoagulant therapy have been excessive test and danger of hemorrhage. But, prothrombin times were run once each 30 days and major and minor bleeding occurred only once each four years of treatment (none fatal) and only 12 patients required hospitalization. There was no control group.

A pertinent point in a discussion of this type most frequently ignored is that anticoagulation does not and is not intended to alter the underlying atherosclerosis. It may aid in the development of collateral circulation since it is possible that it prevents small thrombi from developing in the collateral channels during acute episodes of coronary insufficiency ("spasm"?), thus allowing these to remain patent and continue to develop.

The physician and patient should be well indoctrinated in this form of therapy and properly trained and experienced medical technologists should be employed. The Quick one-stage prothrombin time does not test all the factors of blood clotting but at present, it is a satisfactory and economic test for this form of therapy. In our laboratory, we have been doing comparative studies on the Quick one-stage prothrombin time, the Lee-White clotting time and the Thrombotest (Owren)[6] and it appears the Thrombotest may prove more satisfactory than the prothrombin time in that it requires less technologist time and tests more factors of blood clotting. Salicylates, butazoladin, colbenamid, colchicine, steroids and alcohol adversely effect the clotting mechanism, especially in patients receiving anticoagulant drugs, making control more difficult. Certain vitamin preparations contain significant amounts of vitamin K. Seasonal variations effect the clotting mechanism of the blood. The prescriptions for anticoagulant drugs should be nonrefillable and specific return appointment dates for tests are recommended. Lack of patient cooperation was the major reason (ten per cent of the original cases) for discontinuing therapy in this group.

In 1940, Wiley T. McCollum, M.D., graduated from the University of Oklahoma School of Medicine where he is now an Assistant Professor in the Department of Medicine. He is certified by the American Board of Internal Medicine in Internal Medicine and Cardiovascular Disease. His practice is limited to cardiovascular diseases.

Doctor McCollum is Director of the Heart Station and Cardiovascular Diagnostic Center, Mercy Hospital, Oklahoma City. He is a member of the American College of Cardiology, the American College of Physicians and the American Heart Association.

CONCLUSION

Long term oral anticoagulant therapy in myocardial infarction results in:

1. A decrease in the mortality of five or six times.
2. A decrease in the significant complications of two to three times.
3. No significant danger of hemorrhage to the patient.

REFERENCES

1. Manchester, B.: Value of continuous long term anticoagulant therapy. Ann. Int. Med., 47: 1202, (Dec.) 1957.
2. Bjerkelund, C. J.: Effect of Long Term Treatment with Dicumarol in Myocardial Infarction. Grune and Stratton ,Inc., New York, 1957.
3. Report of working party on anticoagulant therapy in coronary thrombosis to Medical Research Council: Assessment of long term anticoagulant administration after cardiac infarction. Brit. Med J., 1: 803 (Mar. 28) 1959.
4. Likoff, W., Bender, S., and Dreifus, L.: The fate of a patient with so-called mild coronary. J.A.M.A., 177: 109, (Aug.) 1961.
5. McCollum, W. T., Alexander, R. K., and Honick, G. L.: The use of oral anticoagulants in private practice for coronary heart disease. Am. J. Card., (submitted for publication 1961).
6. Owren, P. A.: Thrombotest: New method for controlling anticoagulant therapy. Lancet 2: 754 (Nov. 7) 1959.

Owren, P. A.: The laboratory control of anticoagulant therapy on large groups of patients. Farmakoterapi, No. 4 (1959).

437 N.W. 12th, Oklahoma City, Oklahoma

DELAY IN TREATMENT OF CARDIAC ARREST RESULTS IN MULTIPLE DAMAGES

A woman patient suffered a cardiac arrest during an exploratory laparotomy operation performed at a Navy hospital in Florida. The arrest was noticed immediately after the first incision was made. Ephedrine was injected promptly, but did not restore heart action. Another surgeon was called in, and he performed a thoracotomy and cardiac massage which restored the heart action. A period of materially more than four minutes, however, elapsed from the time of the cardiac arrest to the restoration of circulation.

As a result of the interruption of circulation, the patient suffered brain damage which left her in a condition similar to that of a permanent paraplegic—a vegetative condition. Suit was brought against the United States under the Federal Tort Claims Act. Damages totaling $78,503.78 were awarded by the Federal District Court in Miami.

The court said that it is generally accepted in the medical profession that "a surgeon undertaking a surgical procedure should possess, as a part of his qualifications, the ability to perform a thoracotomy and manual cardiac massage." It held that the hospital personnel were negligent in failing to diagnose cardiac arrest and restore circulation of blood and oxygen to the brain. Declining to apply a local community standard, the court announced that "it cannot be considered accepted medical practice in any community to permit the brain to suffer irreversible damage as a result of an unreasonable lapse of time materially in excess of four minutes."

The damage award was broken down into several elements. The patient was awarded $5,000 for past and future pain and suffering, and $15,000 for the loss of her mental and physical health and her ability to live a normal life. Her husband was awarded $48,503.78 for her future medical expenses, $2,000 for past loss of consortium, and $8,000 for future loss of consortium. The attorneys for the patient and her husband were allowed a fee of $15,700.75 to be paid out of and not in addition to the damage awards.

Kolesar v. *United States*, 198 F. Supp. 517 (DC, S.D., Fla., Aug. 11, 1961)

Long Term Anticoagulant Therapy in Myocardial Infarction*

LOYAL L. CONRAD, M.D.

SOME CLINICAL TRUTHS are self-evident. The effectiveness of Digitalis in relieving the signs and symptoms of congestive heart failure, the results of penicillin therapy in the treatment of pneumococcal pneumonia are of such order of magnitude as to convince the most prejudiced observer; that is, the mass array of uncontrolled individual clinical experience is overwhelming in favor of use of these agents. The prevention of subsequent myocardial infarction by the use of continuous long-term anticoagulant therapy despite its widespread use is not of the same order of effectiveness as to be all-convincing; thus, many studies have been organized and reported in the past** and probably many more will be forthcoming in the future all designed (in one way or another) to test the hypothesis that long-term anticoagulation significantly decreases the recurrence of myocardial infarction. Because these studies have been designed for a purpose it is necessary to examine them to see whether or not the method used is adequate (or even relevant) to attain the desired objectives without bias and with minimal interference from "uncontrolled variables." Unfortunately no study reported to date is even relatively free from errors in experimental design. Since the conclusions are based on data obtained by methods that cannot sustain careful scrutiny, they are, for the most part, valueless or even may be misleading. Thus, at the present time, we can conjecture that long-term anticoagulant therapy *may* prevent recurrences of myocardial infarction but that it does so is not yet proven fact. It has been proven feasible but not without some hazard to the patient.

What should we expect from long-term anticoagulant therapy? If about one-half (variously reported from 20-85 per cent) of all infarcts can be demonstrated to be due to coronary artery thrombosis then we should expect a 50 per cent decrease in the numbers

*From the Medical Service, Veterans Administration Hospital, Oklahoma City, Oklahoma, and the Department of Medicine, University of Oklahoma School of Medicine.

**A complete bibliography is found in reference 3 and is not included here.

of recurrent attacks if therapy is fully successful. Since the patient cannot serve as his own control (because of the time factor) it is necessary to establish a control group of patients against which to evaluate the results of therapy. Since the control group must be as similar as possible to the treated group it is not possible to compare recurrence rates in the treated group with non-treated groups reported by others, with non-treated groups seen previously, or with patients who for one reason or another are not placed on anticoagulant therapy or in whom therapy is stopped. Many of the reported studies have resorted to obtaining control data by these or other objectionable means. Control patients have been dissimilar from treated patients in respect to age, sex, and the presence of hypertensive disease, and diabetes mellitus so that the effects of these variables cannot be evaluated. All in all, quite confusing! Results? In two of the less confusing studies[1,2] the incidence of recurrence of infarction is reduced only for a short period of time (six months or less in male patients under 55 years of age in the British study, perhaps six to nine months for all patients in the Scandinavian study). At face value (ignoring any misgivings about experimental design), these studies define "long-term" to be months at best. More recently it has been stated that "long-term anticoagulant prophylaxis beyond about two months after infarction cannot yet be justified by adequate evidence."[3] A critical survey of the work published in this field makes this the single most valuable reference on the subject. A complete bibliography is included.

Other precautions in assembling a group of control patients are necessary. Since untreated patients are different from placebo-treated patients and because patients who are on an anticoagulant regimen are given something and are observed regularly with appropriate enthusiasm it is mandatory that control patients be given placebos and that double-blind technics be utilized to eliminate physician and patient bias. The studies referred to are deficient in this respect as are all other reported studies. (According to one investigator the use of placebos is immoral although he was willing to subject the patient to the vicissitudes of dicumarol therapy to find out whether it was any good or not—which still is undetermined.) Our own study[4] to date shows a crude mortality rate of four per cent p.a. (per annum) in a male veteran population without significant difference between placebo- and drug-treated patients. This is about the mortality rate reported previously[5] for male veterans with infarct (four per cent p.a. for patients under 50 who survived one year and nine per cent p.a. for patients over 50 who survived seven months). Obviously similar studies need to be conducted in different patient populations as well as in patients where the influence of factors such as hypertensive disease and diabetes mellitus might be evaluated.

To summarize: the hypothesis that continuous long-term anticoagulant therapy is effective in preventing recurrences of myocardial infarction is a hypothesis and is not yet established fact. The most that might be expected is that the number of recurrences may be lessened for the first few months after infarct but even these data are inconclusive. Not more studies but more better studies are needed to draw valid conclusions as to the worthwhileness of the proposed therapy. □

Loyal L. Conrad, M.D., graduated from the University of Oklahoma School of Medicine in 1943 where he is now Associate Professor of Medicine. He is certified by the American Board of Internal Medicine.

Doctor Conrad is a Fellow of the American College of Physicians, a member of the American Federation for Clinical Research and the Central Society of Clinical Research, the Sigma Xi and the Alpha Omega Alpha.

REFERENCES

1. Report of the working party on anticoagulant therapy in coronary thrombosis to the Medical Research Council: An assessment of long-term anticoagulant administration after cardiac infarction. Brit.M.J. 1: 803, 1959.
2. Bjerkelund, C. J.: The effect of long-term treatment with dicoumarol in myocardial infarction. Acta. Med. Scandinav.: Suppl. 330, 1957.
3. McMichael, J., and Parry, E. H. O.: Prognosis and anticoagulant prophylaxis after coronary occlusion. Lancet 2: 991, 1960.
4. Conrad, L. L., Honick, G. L., Wiggins, C. W., and Kyriacopoulos, J. D.: Double-blind study of the effectiveness of long-term anticoagulant therapy in myocardial infarction. Circulation 24: 908, 1961 (abstract).
5. Beard, O. W., Hipp, H. R., Robins, M., Taylor, J. S., Ebert, R. V., and Beran, L. G.: Initial myocardial infarction among 503 veterans. Five-year survival. Am.J.Med. 28: 871, 1960.

921 N.E. 13th, Oklahoma City, Oklahoma

Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris

GALEN P. ROBBINS, M.D.

In selected patients in whom the sole manifestation of coronary artery disease is angina pectoris, the author recommends anticoagulant therapy.

THE GOAL of treatment with anticoagulants in coronary artery disease is the prevention of coronary thrombosis. Additional benefits which may accrue in an anticoagulated population would include reduction in incidence of cerebral thrombosis and embolic complications. This paper is concerned primarily with the indications and usefulness of long term "anticoagulation" in patients with arteriosclerotic cardiovascular disease (ASCVD) whose principal manifestation of the disease process is angina pectoris. Lest there be misunderstanding, angina occurs in other and diverse disorders not necessarily associated with an increased likelihood of coronary thrombosis; therefore, anticoagulant therapy is not indicated in every patient with the symptom, angina pectoris.

There are limitations of the available anticoagulants which preclude complete protection of the "anticoagulated" patient from his or her disease process:

(a) Fatal arrhythmias will continue to occur and account for a significant amount of the mortality in angina pectoris.

(b) It is neither safe nor practical to render the blood entirely incoagulable consequently complete freedom from coronary thrombosis in treated patients may not be anticipated.

(c) Acute myocardial infarction occurs even in the absence of new or "fresh" coronary thrombosis.

(d) Progression of the atheromatous plaque formation will not be altered.

Recognizing these limitations, is there now a sufficient basis for clinical application of long term anticoagulation in selected patients with angina pectoris? Final conclusions cannot be drawn for several years until large and carefully controlled series can be dissected and analyzed with the scrutiny of electronic brains, computers, etc. Meanwhile there are large numbers of patients dying of coronary artery disease. Many come to their physicians with the classic symptom, angina pectoris, pretending their doom! We can be guided by the knowledge that,

(a) Coronary occlusion is present in most patients with angina pectoris;
(b) Most coronary occlusions are due to coronary thrombosis engrafted on an atheromatous plaque;[1] and,
(c) A significant number of these patients will have further coronary thrombosis and/or myocardial infarction with resultant disability or death.[2]

Therefore, the prevention of subsequent thrombosis becomes of paramount importance provided it can be done with relative safety and ease.

EVIDENCE FAVORING ANTICOAGULANT EFFECTIVENESS

(1) From a series of 6882 patients seen at the Mayo Clinic with angina pectoris, the overall death rate with this symptom has been estimated as 15 per cent in the first year the patient consults a physician for the complaint and nine per cent per year thereafter.[2]

(2) Death rate with long term anticoagulation in the series of patients with angina pectoris reported by Waaler[3] varied from five-seven per cent per year (table 1).

These data suggest a salvage of 33 lives per year for every 1000 patients on anticoagulants with ASCVD and angina pectoris.

(3) Of 1544 patients with proven and "impending" myocardial infarction receiving long term anticoagulant therapy collected from several reports,[4-8] the death rate can be estimated as 5.9 per cent per year compared with an estimated death rate of 18 per cent per year in a similarly collected series of "untreated" patients tabulated by Friedberg[9] and reported by a number of authors[4-7, 10-17] (tables 2 and 3).

Table 1

Long Term Anticoagulant Therapy in Coronary Artery Disease Manifest by Angina Pectoris

	1st year	2nd year	3rd year
Waaler's Anticoagulated Patients			
(a) Number	275	236	168
(b) Death Rate %/yr.	4.96%	6.76%	5.43%
Mayo Series not receiving anticoagulants			
(a) Number	6882	—	—
(b) Death Rate %/yr.	15.27%	9.84%	8.14%

Table 2

Mortality Rates with Healed Myocardial Infarctions

Not Receiving Anticoagulants		Receiving long term Anticoagulant Therapy	
No. Patients	Deaths %/yr.	No. Patients	Deaths %/yr.
6061*	18%	1544**	5.9%

* (4-7) (10-17)
** (4-8)

Since anticoagulants appear to be protective in coronary thrombosis with myocardial infarction, they should be protective in coronary thrombosis without infarction (angina pectoris).

(4) In Waaler's 215 patients with ASCVD and angina pectoris receiving a coumarin anticoagulant, there was marked reduction in the frequency of verified infarctions and slight reduction in "possible" myocardial infarctions (table 4).

In economic terms 70 hospitalizations per year might be avoided in every 1000 "anticoagulated" patients with angina pectoris.

(5) Very encouraging results of long term anticoagulation in acute coronary insufficiency have been reported by Wood[18] (table 5).

(6) Providing anticoagulant therapy actually prevents thrombosis but the underlying etiologic factors remain unaltered or progress, there might be an increase in the incidence of thromboembolic complications on cessation of therapy. This has been borne out by widespread clinical impressions as well as the reports of Nichols, et al,[8] describing 18 per cent mortality rate per year in patients discontinuing anticoagulants and a recurrence rate for myocardial infarction

Table 3

Rate of Recurrence with Healed Myocardial Infarction

Not Receiving Anticoagulants		Receiving long term Anticoagulant Therapy	
No. Patients	Recurrences %/yr.	No. Patients	Recurrences %/yr.
440*	29%	322*	5.3%

* (4-6)

Table 4

Incidence of Myocardial Infarction Before and After Anticoagulant Therapy (Waaler)

	Before Coumarin	After Courmarin
Verified Infarction	10.5 %/yr.	3.4 %/yr.
"Possible" Infarction	14.0 %/yr.	12.7 %/yr.

of 50 per cent over a 20 month period following withdrawal of anticoagulants in the report of Keyes, et al.[6]

EVIDENCE REGARDING THE SAFETY OF ANTICOAGULANTS

The incidence of bleeding complications is probably one of the most difficult to assess. As experience has been gained it is apparent that most of the hemorrhagic phenomena can be managed with simple withdrawal of the coumarin derivative for a few days. The most common of the significant bleeding manifestations has been hematuria. This is so frequently heralded by mild lumbar back pain 12-24 hours prior to visible blood in the urine that intelligent patients can be forewarned of its significance and they can stop the drug temporarily and report for a prothrombin time, thus avoiding really troublesome bleeding. Similarly, if the patient has been coached in the likelihood of precipitating trouble with aspirin, "cold" tablets, "arthritis" remedies, etc., these pitfalls may also be avoided.

Our own experience with a rigid program of return visits for prothrombin determinations on a two week basis is adhered to compulsively and has rendered the management of a large group of patients on coumarin derivatives almost automatic. In our clinic the incidence of bleeding of sufficient severity to warrant hospitalization is approximately two per 100 patients per year of treatment. This corresponds to 2.2 bleeding episodes of sufficient magnitude to require Vitamin K treatment per 100 patient years of treatment reported by Waaler.[3] Friedberg[19] reported in 1950 that significant hemorrhages had occurred in two per cent of 25,109 patients collected from the literature and from a questionnaire. Eleven years have passed and physicians on the whole have become more skilled in the use of coumarin drugs. Death would appear to be a rare complication of induced hypoprothrombinemia. Deaths from coronary artery disease are exceedingly common. In no series so far reported has the occurrence of hemorrhagic complications appreciably raised the mortality in anticoagulant treated patients.

Table 5

Results of Long-Term Anticoagulant Therapy in Paul Wood's Series of Patients with Ischemic Heart Disease and Coronary Insufficiency

	"Treated"	"Untreated"
No. of Patients	100	50
% Developing Infarction within two months	3%	22%
% Dead in five years	6%	30%

SELECTION OF PATIENTS

In selecting patients with the symptom, angina pectoris, for anticoagulant therapy, the goal is to select those most likely having arteriosclerotic and thrombotic coronary occlusions. Effort should be made to exclude those patients whose angina pectoris results primarily from increased demand for myocardial blood flow (anemia, severe hypertension, left ventricular hypertrophy) and decreased distribution of blood to the entire myocardium (aortic valve incompetence, arteriovenous fistula, paroxysmal tachycardia).

The patient under 40 who develops angina pectoris has a significantly poorer prognosis than do older patients and for this reason such patients may be considered prime candidates for anticoagulant therapy. Increasing frequency, increasing severity and increasing ease of precipitating angina all constitute indications for anticoagulants. It should be pointed out that the risk of long term therapy in elderly debilitated patients rises significantly and the pros and cons in such patients should be weighed carefully.

Galen P. Robbins, M.D., graduated from Northwestern University Medical School in 1950. Certified by the American Board of Internal Medicine, he limits his practice to cardiology. He is also an Instructor at the University of Oklahoma School of Medicine.

Doctor Robbins is a member of the American Federation of Clinical Research.

It is to be hoped that the newer methods of estimating coronary blood flow with the isotopic procedures of Johnson and Sevelius and the technique for coronary arteriography will enhance our ability to select patients for anticoagulant therapy.

SUMMARY

Long term anticoagulant therapy with coumarin derivatives is recommended for selected patients with arteriosclerotic coronary artery disease manifested by angina pectoris. The exact degree of its effectiveness in reducing mortality and probability of future myocardial infarction remains unanswered. Data supporting the value of long term "anticoagulation" is reviewed. For the present, it appears that the death rate can be reduced by about 30 per cent annually. Further improvement in the prognosis for arteriosclerotic cardiovascular disease with angina pectoris awaits prevention of myocardial infarction in the absence of coronary thrombosis and development of techniques for recognition and treatment of patients prone to ventricular fibrillation.

REFERENCES

1. Blumgart, H. L., Schlessinger, M. J., and Davis D.: American Heart Journal 19: 1, 1940.
2. Block, W. J., Jr., Crumpacker, E. L., Dry, T., and Gage, R. P.: Journal American Medical Association 150: 259, 1952.
3. Waaler, B. A.: Acta Medica Scandinavica 157: 289, 1957.
4. Bjerkelund, C. in Owren, P.: Northwest Medicine 56: 298, 1957.
5. Suzman, M. M., Ruskin, H. D., and Goldberg, B.: Circulation 12: 338, 1955.
6. Keyes, J. W., Drake, E. H., Smth, F. J.: Circulation 14: 253, 1956.
7. Owren, P. A.: Northwest Medicine 56: 298, 1957.
8. Nichols, E. S., Keyes, J. W., Berg, J. F., Borg, J. F., Coogan, T. J., Boerer, J. J., Mullins, W. L., Scott, T., Page, R., Griffith, G. C., and Massie, E.: American Heart Journal 55: 142, 1958.
9. Friedberg, C. K.: New York State Journal of Medicine 58: 877, 1958.
10. Katz, L. N., Mills, G. Y., Cisneros, F.: Archives of Internal Medicine 84: 305, 1949.
11. Sigler, L. H.: Journal American Medical Association 146: 998, 1951.
12. Waldron, F. A., Constable, W. P.: Tr. a Life INs. Med. Dir. Amer. 34: 69, 1951.
13. Eckerstrom, S.: Acta Medica Scandinavica 139: 1, 1951.
14. Robb, G. P., Marks, H. H.: Statistical Bulletin Metropolitan Life Insurance Co., 34: 1, 1953.
15. Cole, D. R., Singian, E. B., and Katz, L. N.: Circulation 9: 321, 1954.
16. Weiss, M. M.: American Journal Medical Science 231: 9, 1956.
17. Richards, D. W., Bland, E. F., and White, P. D.: Journal of Chronic Diseases 4: 415, 1956.
18. Wood, P.: British Medical Journal 5242: 1779, 1961.
19. Friedberg, C. K.: New York State Journal of Medicine 58: 877, 1958.
20. Parker, R. L., Dry, T. J., Willius, F. A., and Gage, R. P.: Journal American Medical Association 131: 95, 1946.

Pasteur Building, Oklahoma City, Oklahoma

AMA-BLUE SHIELD OFFER INSURANCE PLAN

A uniform, nationwide Blue Shield program of surgical and medical care benefits for all persons over the age of 65 ($3 per month) was announced jointly on January 17th by the AMA and the National Association of Blue Shield Plans.

F. J. L. Blasingame, M.D., executive vice president of the AMA, said the Board of Trustees had reviewed an outline of the surgery and medical care benefits to be offered by the nation's 69 Blue Shield plans and had recommended that all state medical societies cooperate fully with the local Blue Shield affiliates in implementing the program as soon as possible.

John W. Castellucci, executive vice president of Blue Shield, said the proposed program would provide for surgery whether performed in a hospital or a doctor's office and for medical care whether in a hospital or a licensed nursing home.

Castellucci said it would also provide payments for anesthesia, x-ray examinations and therapy, laboratory and pathology. He said the extent of coverage for doctors' visits in a hospital or nursing home had not been set, but he indicated that the program would provide for not less than 30 visits and possible as high as 70.

Castellucci said the Blue Shield program will pay the full cost of medical-surgical services for single persons over 65 whose annual income is $2,500 or less and for a husband and wife whose combined annual income is $4,000 or under. Persons enrolled in the new program whose income exceeds these limits could be subject to an additional charge, but this would be at the discretion of the individual physician. OSMA's Prepaid Care Committee is now studying the plan.

The Case Against the Use of Anticoagulation in Angina Pectoris

W. W. RUCKS, JR., M.D.

Skepticism is being expressed in various centers throughout the world as to the usefulness of anticoagulation in coronary artery disease. It should be interesting to observe how this matter is decided as more evidence accumulates over the next few years.

THE WRITER of this part of the symposium accepts the title "The Case Against" etc., with tongue in cheek, for by no means does he have information to make such a case. Every experienced clinician has followed a goodly number of patients with angina pectoris. He has opinions about various aspects of the treatment and he may or may not have used anticoagulation as a method of treatment. Unless he has compared an adequate number of treated and untreated patients under rigidly controlled conditions, his opinion in regard to that aspect of management is of little value.

The most comprehensive and critical reports regarding anticoagulants in ischemic heart disease during the past few years are by Borchgrevink,[1] Bjerkelund,[2] McMichael and Parry,[3] and the British Medical Research Council.[4] Although most of the material is in regard to the use of anticoagulant treatment of acute infarction and anticoagulant prophylaxis after infarction, there is little controlled study of the use of these substances in angina pectoris.

Everyone knows the unpredictability of the pain pattern in angina pectoris. It is commonly influenced by many factors—physical activity, emotions, confidence in the attending physician, change in life's situations, the proper use of nitroglycerin, increase in collateral circulation, and others. Inability to control all of these factors tends to make the recorded instances of improvement of symptoms, due to anticoagulants, or any other treatment, doubtful to say the least.

Some of the evidence regarding the value or the lack of value of anticoagulants in angina pectoris may be inferred from the results of long-time anticoagulant prophylaxis following infarction. There is good reason for this inference when one considers the underlying pathologic substrate. Angina pectoris represents a clinical entity and this is justified on both historical and clinical grounds, yet in nearly every instance there is some structural abnormality resulting in relative cardiac ischemia. Blumgart and Zoll,[5] found in 1200 patients studied clinically and at autopsy by injection of the coronary arteries, not a single instance of angina pectoris in the absence of structural heart disease. Not only was coronary narrowing the commonest finding, but in many instances healed infarction was present. In fact, in their 1951 studies[6] they found that 90 per cent of all cases of angina pectoris were due

to coronary atherosclerosis and that two-thirds of these had had one or more complete obstructions.

Borchgrevink[1] feels that the reduced number of deaths and the reduced number of re-infarctions in his treated group (that is, the group with prothrombin activity in the range of 20 per cent VS the group in the range of 50 per cent), is quite significant. It should be pointed out, however, that his studies lasted for a period of less than two years. He concludes that (1) patients with angina pectoris with or without previous infarction should be given long-time anticoagulant therapy regardless of severity of symptoms, and (2) patients who are given long-term anticoagulant therapy for arterial disease should be treated intensively. One should aim at a reduction of clotting activity to a level of 15 per cent.

On the other hand, Bjerkelund[2] in his well controlled clinical studies states that "he has not been convinced that long-term treatment with dicumarol has any definite prophylactic effect against the tendency to attacks of retrosternal pain in this group, (angina pectoris) of patients." His results do indicate, however, that long-term treatment with dicumarol of patients under *60 years old* has resulted in statistically significant reduction both in the mortality and in the incidence of recurrent infarction during the first twelve months after an acute infarct.

The report of the British Medical Research Council[4] is a superbly conceived, well controlled experiment carried on at a number of hospitals under the chairmanship of Sir George Pickering. Great care was exercised in establishing comparable controls. They cautiously conclude that there is a definite lowering in mortality and re-infarction rate with treatment following acute infarction but only in the first one or two years following onset. The report did not discuss angina as such, but in view of the pathologic physiology of the syndrome it would not be illogical to assume that treatment during the first year or two might be helpful.

McMichael and Parry[3] found "that it is difficult to define the place of anticoagulants in preventing myocardial infarction." They further conclude "that it is probably only in the acute and healing phases of myocardial infarction that anticoagulant treatment may be effective in increasing survival, but even this is not yet statistically proven. Long-term anticoagulant prophylaxis beyond about two months, after infarction, cannot yet be justified by adequate evidence."

COMMENT

It seems likely that most of the benefit derived from anticoagulants in the acute and healing phases of infarction comes about from the prevention of venous thromboses and subsequent pulmonary embolism. Venous thromboses are undoubtedly produced by the various factors associated with rest in bed. Arterial thromboses, on the other hand, result from disease of the artery itself with liberation of tissue thromboplastins. Myocardial infarctions have been reported in patients with hemophilia. Also, other factors than thrombosis may play a part in myocardial infarction, namely, subintimal hemorrhage, dislodgement of placques, etc.

Nearly everyone agrees that patients with angina pectoris should be kept out of bed because activity is thought to encourage collateral circulation. If this plan is followed, anticoagulants would have little opportunity to prevent venous thromboses. On the other hand, if angina were very recent, one might conclude that it was occurring in the healing phase of an unrecognized infarction and that treatment would be beneficial.

It is important to come to some conclusion of this matter. Certainly if there is good evidence that anticoagulant prophylaxis protects patients with angina pectoris from subsequent infarction, it should be used. It must be remembered that this type of manage-

---

Since graduating from Vanderbilt University School of Medicine in 1928, W. W. Rucks, Jr., M.D., has been certified by the American Board of Internal Medicine. In addition to his private practice, Doctor Rucks is Professor of Clinical Medicine at the University of Oklahoma School of Medicine.

He is a Fellow of the American College of Physicians and a member of the American Clinical and Climatological Association

ment is time consuming, moderately expensive, and not without inherent danger of its own, and unless there is real evidence of its benefits its potential harm would militate against its use.

CONCLUSION

Attention is again called to the impropriety of "making a case" for or against *anything* without good evidence. An attempt has been made to examine the evidence and this has been found to be difficult, and not clear cut. At the present time, it seems wise to treat patients for a year or so with anticoagulants when angina pectoris has existed two years or less, and to withhold such treatment if the syndrome has existed two years or more. By no means has this matter been settled, and as more evidence is accumulated one should be ready to revise one's attitude. □

BIBLIOGRAPHY

1. Borchgrevink, C. F.: Long-Term Anticoagulant Therapy in Angina Pectoris and Myocardial Infarction. Acta. Med. Scand. 158 (Supplement 359-366): 1-52, 1960.
2. Bjerkelund, C. J.: The effect of Long-Term Treatment with Dicumeral in Myocardial Infarction. Acta Med. Scand. 158 (Supplement 330): 13-212, 1957.
3. McMichael, J. and Parry, E. H. O.: Prognosis and Anticoagulant Prophylaxis after Coronary Occlusion. The Lancet, Vol. 279: 991, 1960.
4. British Medical Journal, Vol I: 803, 1959: Report of the Working Party on Anticoagulant Therapy in Coronary Thrombosis to the Medical Research Council.
5. Blumgart, H. L. and Zoll, P. M.: Pathologic Physiology of Angina Pectoris and Acute Myocardial Infarction, Circulation, Vol. 22: 301, 1960.
6. Zoll, P. M., Wheeler, S., and Blumgart, H. L.: Angina Pectoris A Clinical and Pathologic Correlation, Am. J. Med. 11: 331, 1951.

301 N.W. 12th, Oklahoma City, Oklahoma

MEDIPHONE, INC.

The world's first service center for emergency drug information for the nation's nearly 200,000 doctors was put into operation January 8. Conceived and operated by physicians, the service, called Mediphone, is a drug information center located in Washington, D.C. It is capable of supplying detailed data instantaneously on any one of the more than 8,000 drugs in use today. Any member physician in the country, faced with an emergency or wanting to know more about a drug he wishes to use, can obtain all the information he needs any time of the day or night by telephone.

Mediphone was described by its founder and president, Doctor Cortez F. Enloe, Jr. "For the first time," Doctor Enloe said, "patients have assurance that their physician will now be better able to meet emergencies resulting from untoward drug effects such as overdosage, incompatibilities with other medications and emergencies of similar nature. The doctors in the nation who join Mediphone will be up-to-date on their drugs."

On the basis of extensive tests and analysis of inquiries made of the new service over the past 18 months, Doctor Enloe said Mediphone will soon become the nation's primary source of data on drug therapy. "The information that Mediphone stores for doctors," Doctor Enloe stated, "was gathered by a research team of physicians, biochemists, pharmacologists, pharmacists and toxicologists. They studied offical compendia, textbooks, manufacturers' data and medical periodical literature covering a 15-year period. The data," he said, "will be kept current with the assistance of the Department of Pharmacology of George Washington University Medical School, the College of Pharmacy of Long Island University, a team of medical librarians searching more than 200 medical journals each month and with official reports from the American Medical Association."

The new service works this way: When a physician enrolls in Mediphone—the cost of membership is twenty dollars a year—he is assigned a registry number and issued a permanent card bearing that number. Any hour of the day or night when a physician places a call to Mediphone, he states his registration number and the questions to be answered. Within a matter of seconds, the Mediphone responder—always a physician—gives the answer. Within 24 hours after the call is completed, Mediphone mails the member physician a report of his inquiry for his case records. Verbatim transcripts of the call are also available if needed. Mediphone address: 1500 Massachusetts Avenue, N.W., Washington 5, D.C.

The Use of Anticoagulants in Impending Myocardial Infarction

JOHN J. DONNELL, M.D.

THE USUAL ATTACK of acute myocardial infarction occurs without warning. Premonitory symptoms exist in some instances, however, a fact first noted by Herrick[1] in his original description of the clinical syndrome of acute obstruction of the coronary arteries.

Prior to the era of anticoagulant therapy, the recognition of impending myocardial infarction was of no great practical importance. In 1944, Bayley and LaDue[2] did emphasize the importance of early recognition of the syndrome, since infarction might be minimized or prevented at this stage. Wood,[3] in 1949, suggested that symptoms of impending myocardial infarction occur with sufficient frequency to be recognized clinically, and reported results of anticoagulant treatment in 33 such cases.

The reported incidence of prodromata in acute myocardial infarction varies widely: Yater[4] found 9.5 per cent in men below the age of 40 years; Sampson and Eliaser[5] reported an incidence of 48 per cent. Other authors find an incidence somewhere between these two extremes.

The diagnosis of impending myocardial infarction can be made with certainty only in retrospect; the patient with acute myocardial infarction, giving a history of transient episodes of coronary type pain during the two to three day interval prior to the major attack, obviously was "threatening to infarct." Such a history may be obtained with surprising frequency when searched for diligently. Presented with this same history prior to the acute infarct, one would consider other possibilties in addition to impending myocardial infarction. Angina pectoris may have such an onset, without terminating in myocardial infarction for years if at all. "Acute Coronary Insufficiency" as described by Master[6] and "Coronary Failure" by Blumgart[7] are separate entities in the opinion of these authors, but are difficult to differentiate clinically.

In 1951, Mounsey[8] analyzed 139 cases of acute myocardial infarction and found that recognizable prodromal symptoms occurred in 40 patients, an incidence of 29 per cent. No significant differences were found in age distribution, sex incidence, incidence of hypertension or diabetes in the groups with and without prodromal symptoms. The mortality rate in patients with prodromata was

13 per cent, compared to 50 per cent in patients without prodromata. The prodromal pain was typically anginal in character, site and radiation, with a duration of five to 30 minutes in most instances, but occasionally several hours in duration. Electrocardiograms were obtained in ten cases of the 40 with prodromal symptoms; four showed evidence of myocardial ischemia, two were normal at rest, but exhibited evidence of myocardial ischemia after exercise, and four were normal at rest in patients who did not have an exercise electrocardiogram. Mounsey considered the prodromal pain to be atypical of angina in all cases, with the following distinguishing features: (1) A crescendo quality to the attacks of pain, characterized by increasing frequency, duration and severity, along with diminishing exercise tolerance. (2) Prolonged duration of attacks. (3) Inconstant relation of pain to effort.

The pathogenesis of impending myocardial infarction is not entirely clear. No specific pattern of involvement has emerged from autopsy studies. A gradual narrowing of the lumen of a coronary artery would of necessity be the underlying process, whether due to an atherosclerotic plaque, subintimal hemorrhage, formation of a local thrombus, or a combination of these factors. It seems plausible to consider the possibility that intermittency of symptoms in impending myocardial infarction occurs as a result of local formation of fibrin thrombi at the site of a narrowed lumen, with relief of symptoms incident to spontaneous fibrinolysis. This mechanism has been postulated to be responsible for the syndrome of intermittent cerebrovascular insufficiency, and distinct similarities exist between this syndrome and impending myocardial infarction.

In 1949, Wood[3] treated 33 patients with "acute coronary insufficiency" during the acute phase with anticoagulants; two infarcts developed, with no deaths. In 25 similar untreated controls there were 12 infarcts and five deaths.

Nichol[9] in 1950, reported 41 cases of acute coronary insufficiency or impending myocardial infarction, treated with heparin and dicumarol. He reported "prompt and striking relief of pain," with transmural infarction in only two instances. In 1958, Nichol, et al.,[10] reported 96 cases of impending myocardial infarction treated with anticoagulants during the acute phase with a mortality rate of six per cent; 32 patients in this group who abandoned treatment had a mortality rate of 18 per cent.

Beamish and Storrie[11] accumulated 100 cases of impending myocardial infarction, 15 of which group served as control subjects. Of the 15 control patients, 14 had acute myocardial infarction, 11 of which were fatal and three non-fatal; 12 of these infarctions occurred during the acute phase (first six weeks) and two during the chronic phase (seven weeks to six months). Of the 85 patients receiving anticoagulants, only two had infarctions during the acute phase. They concluded that anticoagulant therapy favorably influenced the outcome in impending myocardial infarction, particularly during the acute phase of the illness. In view of these beneficial results they also concluded that (1) Subintimal hemorrhage is not aggravated by anticoagulants, (2) that secondary thrombosis in relation to the subintimal hemorrhage is prevented, or (3) Subintimal hemorrhage is not a common event.

DISCUSSION

The syndrome of impending myocardial infarction appears to be a distinct entity, and its recognition has increased in frequency with the advent of anticoagulant medications. Reported results obtained through the use of anticoagulants during the interval of impending myocardial infarction are impressively good. There does appear to be a need for more control studies. Recurrently, the problem of impending infarction appears in clinical practice. The "crescendo

---

John J. Donnell, M.D., graduated from the University of Oklahoma School of Medicine in 1943 where he is now Associate Professor of Medicine. He is certified by the American Board of Internal Medicine—Cardiovascular Diseases.

He is a Fellow of the American College of Physicians and holds memberships in the American Society of Internal Medicine, the American Heart Association and the Oklahoma City Clinical Society.

quality" described by Mounsey is all too familiar, and it is not unusual to see such a patient continue his attacks unabated in spite of adequate amounts of heparin, with his course climaxed by acute myocardial infarction, or ended by sudden demise. This has led many clinicians to believe that anticoagulants are of no value in such instances, and there are competent cardiologists who are opposed in principle to their use in this syndrome. These latter physicians should represent a source for an adequate control study. Until otherwise demonstrated, it appears advisable to employ adequate amounts of heparin in the treatment of impending myocardial infarction, and follow this acute phase with long-term maintenance anticoagulant therapy. □

REFERENCES

1. Herrick, J. B.: Clinical features of sudden obstruction of the coronary arteries. J.A.M.A. 59: 2015, 1912.
2. Bayley, R. H. and LaDue, J. S.: Electrocardiographic changes of impending infarction, and the ischemia-injury pattern produced in the dog by total and subtotal occlusion of a coronary artery. Am. Heart J. 28: 54, 1944.
3. Wood, P.: Therapeutic application of anticoagulants. Tr. M. Soc. Lond. 66: 80, 1948.
4. Yater, W. M., Traum, A. H., Brown, W. G., Fitzgerald, R. P., Geisler, M. A., and Wilcox, B. B.: Coronary artery disease in men eighteen to thirty-nine years of age. Am. Heart J. 36: 334, 1948.
5. Sampson, J. J., and Eliaser, M.: The diagnosis of impending acute coronary artery occlusion. Am. Heart J. 13: 675, 1937.
6. Master, A. M., Jaffe, H. L., Field, L. E., and Donoso, E.: Acute coronary insufficiency: Its differential diagnosis and treatment. Ann. Int. Med. 45: 561, 1956.
7. Blumgart, H. L., Schlesinger, M. J., and Davis, D.: Studies on the relation of the clinical manifestations of angina pectoris, coronary thrombosis and myocardial infarction to the pathologic findings, with particular reference to the significance of the collateral circulation. Am. Heart J. 19: 1, 1940.
8. Mounsey, P.: Prodromal symptoms in myocardial infarction. Brit. Heart J. 13: 215, 1951.
9. Nichol, E. S.: The use of anticoagulants in acute coronary insufficiency or impending myocardial infarction. South. M. J. 43: 565, 1950.
10. Nichol, E. S., Keyes, J. N., Borg, J. F., Coogan, T. J., Boehrer, J. J., Mullins, W. L., Scott, T., Page, R., Griffith, G. C., and Massie, E.: Long term anticoagulant therapy in coronary atherosclerosis. Am. Heart J. 55: 142, 1958.
11. Beamish, R. E., and Storrie, V. M.: Impending myocardial infarction. Recognition and management. Circulation 21: 1107, 1960.

1214 N. Hudson, Oklahoma City, Oklahoma

OSMA Regional Postgraduate Course

"THE COLON"

Valley View Hospital, Ada

February 27, 1962

AFTERNOON		EVENING	
4:30 p.m.	Physiology	6:00 - 7:00 p.m.	Dinner
5:00 p.m.	Functional Diarrhea and Constipation	7:00 p.m.	Polyps and Neoplasms
5:30 p.m.	Diverticulosis and Diverticulitis	8:00 p.m.	Problem Case: Ulcerative Colitis

Instructors: Merlin K. DuVal, Jr., M.D., Robert A. Schneider, M.D.
Jack D. Welsh, M.D.

REGISTRATION FEE $7.50 (Includes Dinner)

AAGP Category 1 Credit—Four Hours

The Case Against Anticoagulation in Coronary Insufficiency

WILLIAM F. EWING, M.D.

This syndrome is poorly defined. There is a paucity of evidence of any beneficial effect of anticoagulation.

THE TERM "acute coronary insufficiency" has become popular in recent years. It is used, most commonly, as a designation for the patient with prolonged anginal pain but without the electrocardiographic changes of a transmural myocardial infarction. Electrocardiographic changes most commonly described as typical in "acute coronary insufficiency" are S-T depressions with or without late T-wave inversion.

Enzyme studies, in the situation described above, are invaluable to the physician in determining if actual myocardial infarction has occurred. Initial popularization of the term "acute coronary insufficiency" occurred prior to the discovery of the value of the transaminase and the literature on the subject undoubtedly includes many cases of infarction, particularly subendocardial infarction.

It is clear from the above that the question of anticoagulation in "acute coronary insufficiency" cannot be entirely divorced from anticoagulation in acute infarction. "Acute coronary insufficiency" cannot always be distinguished, at the onset, from myocardial infarction. The physician who routinely anticoagulates myocardial infarcts will find he has also anticoagulated a certain percentage of patients who retrospectively have no evidence of muscle death.

Because of the indefinite meaning of the terms it is difficult to compare series of cases in the literature. The series containing a high percentage of cases which actually are myocardial infarctions would probably make mortality higher. The series which contains a large percentage of cases occurring under circumstances of extreme stress, e.g. surgery or hemorrhage, might well have a lower mortality than a series containing a large percentage of "spontaneous" coronary insufficiency. It would be reasonable to assume the "spontaneous" group had a greater

---

William F. Ewing, M.D., graduated from the University of Oklahoma School of Medicine in 1953. His practice is limited to his specialty, internal medicine.

Doctor Ewing is a member of the Board of Directors of the Tulsa County Heart Association and a member of the Oklahoma Heart Association.

amount of coronary atherosclerosis.

Master, et al.,[1] have published a "control" group of 141 patients with coronary insufficiency followed for an average of 6.5 years. The mortality has been nine per cent, 60 per cent of this group were in the "spontaneous" group. Nichol, et al.,[2] followed a group of 96 "impending infarctions" on long-term anticoagulation for an average of 22 months with a mortality of 6.2 per cent. The two groups are not comparable but reveal a much better prognosis than would be anticipated by most physicians.

With the use of an anticoagulant, the risk of bleeding is a serious one. In Nichol's group there was a 20 per cent incidence of bleeding with 0.5 per cent mortality from bleeding. In other series the incidence of bleeding varies widely, but an average figure would probably be about 10 per cent incidence of bleeding with one per cent incidence of fatal bleeding in long-term anticoagulation.

In recent months there has been evidence submitted of a possible hypercoagulable state following the discontinuance of anticoagulation treatment and evidence of increase risk of thrombotic phenomena following withdrawal. Sise, et al.,[3] separated 123 patients with 136 instances of anticoagulation withdrawal into three groups: One group of 43 patients were withdrawn because of bleeding; a second group were withdrawn for many varied reasons; and a third group were withdrawn primarily for surgical procedures. The group withdrawn because of bleeding had 20 of the total 38 instances of thrombotic complication; 10 of the 20 were fatal; 14 of the 20 occurred during the first four weeks after withdrawal. This report points out that there may be an increase in thrombotic complication following withdrawal of anticoagulation, especially if withdrawn because of bleeding. It also indicates that series which compare the future of patients who continue treatment with those who stop treatment because of bleeding are introducing a bias into the study.

SUMMARY

"Acute coronary insufficiency" is difficult to define and no satisfactory large series exists for mortality study with and without long-term anticoagulation therapy.

The prognosis in "acute coronary insufficiency" may be better than one would anticipate.

There is a risk of fatal bleeding complication with long-term anticoagulant treatment approximating one per cent with more less serious bleeding episodes. □

BIBLIOGRAPHY

1. Master, A. M., and Jaffe, H. L.: Complete Functional Recovery after Coronary Occlusion and Insufficiency, J.A.M.A. 147: 1721, 1951.
2. Nichol, E. S., et al: Long Term Anticoagulant Therapy in Coronary Atherosclerosis, Am. Heart J. 55: 142, 1958.
3. Sise, H. S., Moschos, C. B., Goutheir, J., and Becher, R.: The Risk of Interrupting Long-Term Anticoagulant Treatment. A Rebound Hypercoagulable State Following Hemorrhage, Circ. 24: 1137, 1961.

2020 South Xanthus, Tulsa, Oklahoma

PROFESSIONAL EDUCATION THROUGH TELEVISION AT HOME

The Oklahoma State Medical Association's Postgraduate Education Committee and the OU Medical Center's Postgraduate Department will jointly inaugurate an experimental professional education series of televised programs this month. Physicians cooperating in the project will be able to receive six half-hour courses in their own homes.

All physicians in the state were recently surveyed regarding their ability to receive the educational channel broadcasts emanating from Oklahoma City and Tulsa stations, and were offered an opportunity to enroll for the series. Those who have not responded to date may register for the instruction by writing the Postgraduate Department, OU Medical Center, 800 N.E. 13th, Oklahoma City.

A Brief Critique

LEON C. FREED, M.D.

THAT THIS SYMPOSIUM would not and could not give a definitive answer to this problem was obvious at the onset. The definitive and final experiments to answer the questions propounded have not been thus far carried out. But it does point up the ever increasing necessity of some means of improving the transmission of basic medical concepts to the practicing physician. There is a drastic need of winnowing and selecting on the part of our medical editorial staffs. And even more the practicing physician must elevate his critical acumen as a reader and student. He cannot digest the horrendous outpouring of print that threatens him daily, nor can he remain *au courant* with occasional review articles, sporadically attended brush up courses, and medical meetings. Rather his period of formal education must extend throughout his lifetime. The teaching content must be selected by those completely aware of current trends and content of medical knowledge. Such a program obviously can be created only by a faculty of a medical school. No one else can do it.

Perusal, or even careful study of the preceding series of articles, will, I fear, do little to clarify the question of propriety, efficacy or dangers inherent in the use of anticoagulants in the various aspects of atherosclerotic heart disease. Even the very proper exhortation that you "read and digest" and then "evaluate the evidence" for yourself, though proper, is impossible on the basis of the material here presented. For myself I remain in the ambivalent situation of not knowing whether *anticoagulating* someone is better therapeutics than it is grammar. With the aid of the Index Medicus I can give you an immense volume of clinical work proving beyond any question that it is malpractice to do so, as well as fruitful, miraculous though futile. Every experiment thus far either pro or con, can, and has been challenged on the familiar basis of improper selection of cases, faulty criteria, and incorrect evaluation of the assembled data. And I know not which author is behaving "like the squid, beclouding the issue with jets of ink as he proceeds erratically backward." □

OSMA Launches Intensive Campaign Against H.R. 4222, the King-Anderson Bill

"1962 is a year of decision—the American people, through their elected Congressional representatives, must decide the fate of America's health care system."

Doctor Tom Points, Chairman of the OSMA's Federal Legislative Committee, was referring to the King-Anderson Bill as he announced plans to launch a massive attack on the socialistic measure. The bill, labeled H.R. 4222, proposes to provide hospital, nursing home, home care and certain medical care benefits to all Americans over 65 years of age who are drawing Social Security benefits—some 14 million persons—regardless of whether they want or need such Federal benevolence!

"The proposal is ill-advised in many respects," he explained:

"First, there is no proven need to adopt such drastic legislation. In Oklahoma, for example, about 40 per cent of the total over-65 group is now eligible to receive tax-financed health care benefits, through the implementation of the Kerr-Mills Law and through a pre-existing medical care program for Old Age Assistance recipients. Last year, nearly $20 million in state and Federal funds was spent in Oklahoma for such care.

"Moreover, it is estimated that about one-third of the Oklahomans in this age group possess voluntary prepayment plans or health insurance. Many others are financially independent. In short, most of our elderly are protected. There is no uprising of the aged—there is no drastic need!

"Secondly—and even more importantly—the affects of H.R. 4222 go far beyond the immediate socialization of health care for a segment of the population. Affixing health care to the Social Security mechanism provides a convenient framework for future expansion, and perpetual expansion has been the history of the program. Advocates of H.R. 4222—including the Socialist Party—have openly boasted that they will not be satisfied until the program encompasses Americans of all ages.

"Other ramifications of the bill include such ominous features as empowering the Secretary of Health, Education and Welfare with the right to select participating hospitals, the right to determine "reasonable" amounts to be paid for services rendered, approval of drugs, etc.

"Let there be no mistake about it," Doctor Points concluded, "H.R. 4222 is purely and simply a devious scheme to socialize the world's finest health care system, supplanting it with an inferior plan which will surely lower the quality of care available to Americans of all ages."

A Clear Cut Issue

Medicine's argument against the King-Anderson Bill, Doctor Points observed, is based on the fact that the Kerr-Mills Bill, placed into effect October, 1960, is working well, and is designed to help those who need help—the **indigent** elderly. It is a flexible program involving state and Federal matching funds, and it provides for **local** control, **local** design, and **local** administration.

In contrast, the King-Anderson proposal would provide tax-paid health care regardless of need. It would establish a powerful, central bureaucracy, so removed from the variable problems within the states that vast waste of tax funds is a certainty.

H.R. 4222 would cost Oklahoma taxpayers an estimated $20 million per year. Nationally, conservative lionestimates place the figure at $2 billion annually. It would mark the first time that Social Security was used to purchase services for the recipients, rather than provide cash benefits.

Oklahoma Action

The OSMA Federal Legislative Committee, working in cooperation with the AMA, has designed a full-scale, intensive campaign to guide Oklahoma legislators toward the right decision on H.R. 4222.

Oklahoma's campaign has two basic objectives:

1. **To provide support for Representative Wilbur Mills (D. Ark.), Chairman of the House Ways and Means Committee.** H.R. 4222 has been in Mills' Committee for a year, and he has steadfastly resisted reporting it out for a vote of the House of Representatives. During the present session of Congress, however, the Administration is subjecting the conservative Congressman to considerable pressure to expedite passage of H.R. 4222. To maintain his position in the face of such pressure, he needs written support from Americans everywhere, and moral support from his legislative colleagues.

2. **To register massive opposition to H.R. 4222 by writing to Oklahoma's six U.S. Representatives and two Senators.** They can help us and Chairman Mills keep it in committee. If the measure should be reported out of committee for a vote, we will need 220 votes to defeat it!

To accomplish these objectives, the OSMA Federal Legislative Committee has developed a **Three Phase Legislative Program:**

Phase I. Resolutions from Medical Groups

All county medical societies and woman's auxiliaries have been contacted for resolutions opposing the bill. Each group is to send copies of their resolutions to the U. S. Representative in their district, the two Senators and to Representative Mills.

Phase II. Resolutions From Other Groups

The Executive Office of the association is now contacting allied professional groups and other state or-

PAUL W. TUCKER

ROBERT MORRIS

HOWARD E. KERSHNER

R. A. ARMSTRONG

ANNUAL MEETING FEATURES AMERICANISM

As an added extra to Program Chairman Rex Kenyon's educational "Three Ring Circus", one of the featured highlights of the 1962 OSMA Annual Meeting will be a special section meeting on the physician's responsibility as a citizen in the pursuit of freedom.

The meeting will take place Sunday morning from 9 a.m. until noon in the Monterey Room of Oklahoma City's Skirvin Hotel. It is one of nine programs to be presented in three separate meeting rooms of the Skirvin, as planning for the OSMA's annual meeting, set for May 5-7, unfolds into a diversified program format designed to offer broad appeal to the membership.

A Free Society?

Kicking off the citizenship meeting will be Howard E. Kershner, President of the Christian Freedom Foundation, Inc., of New York City, who will speak on "The Moral Basis of A Free Society." Doctor Kershner, a native of Kansas, has formerly been editor and publisher of the **Dodge City Daily Journal**, Assistant Newspaper Chief of the War Industries Board, W.W.I., and Executive Vice-President of the International Commission for the Relief of Refugee Children in Europe. Later, he organized and was president of the Temporary Council on Food for Europe's Children, and was a member of the Executive Committee of Herbert Hoover's Committee on Food for the Small Democracies. He was an original director of CARE and has been a representative of the Secretary General of the United Nations.

Second speaker of the morning is Robert Morris, President, University of Dallas. The lawyer-educator will speak on "Extension of Freedom Should Replace Retreat."

Morris has a long and impressive history of government service, including two two-year terms as Chief Counsel, United States Senate Internal Security Subcommittee. He has also served as legal counsel to the Senate Foreign Relations Committee.

As a Commander in the Navy, he had extensive experience in counter intelligence, with emphasis on communist counter intelligence and psychological warfare. He is a graduate of the Fordham Law School.

Reverand Ray Armstrong, third speaker on the program, has chosen the subject of "The Twentieth Century Catastrophe."

Well known in Oklahoma for his leadership in the Oklahomans For Right to Work campaign, Armstrong has had similar experience in Kansas. Prior to this activity, he was an ordained minister of the Christian Church, with pastorates in Eureka and Hutchinson, Kansas.

This Spring, Reverend Armstrong will accept a position on the staff of the Foundation for Economic Education, Irvington-on-the-Hudson, New York.

Anchor man of the morning session will be Paul W. Tucker, Assistant Director of Public Affairs, Phillips Petroleum Company, Bartlesville. His topic will be "What Can I Do in '62? . . . A Personal Challenge."

Tucker, a scientist, author, speaker, is active in the field of public affairs, working to develop a greater interest among Americans in their government's precepts, processes, internal and international issues.

During World War II, Tucker served as a chemist-spectroscopist. He joined Phillips in 1948 in Bartlesville, where he also serves as chairman of the new committee on Americanism for the Elks Lodge, and heads the city's Civil Defense Shelter Board. An authority on liquefied petroleum gases, Tucker received the first Distinguished Service medallion awarded by the New Mexico Petroleum Industries Committee.

The section meeting on Americanism was arranged by J. R. Stacy, M.D., General Chairman of the Annual Meeting.

Other program plans for the annual meeting include: A General-Interest section, featuring ten distinguished guest lecturers; section meetings on Tax and Legal Problems and Investments; and Special-Interest presentations on the subjects of Urology, Obstetrics - Gynecology, Pathology, Medicine, and Surgery. □

---

ganizations to obtain resolutions opposing H.R. 4222.

Phase III. County Society Action Committees

Action committees are now being formed in each county of the state, with the objectives of developing a letter writing compaign, procuring resolutions from local business, civic, fraternal and professional groups, establishing a speaker's bureau, and promoting good press relations with local news media. A member of the woman's auxiliary is being appointed to each committee to provide liaison and integrate the ladies into all aspects of the program.

Regional Briefings

County committees will be supplied by the OSMA with packets and materials to help them carry out their work. Briefing sessions are being organized for this purpose and to fully explain all details of the campaign.

"The success of the program rests with these county committees," Doctor Points said, "for it is at that level where we can best influence our legislators." □

Oklahoma Medical Political Action Committee—"OMPAC"

A new medical organization has been formed in Oklahoma—OMPAC—The Oklahoma Medical Political Action Committee.

At a meeting in Oklahoma City on January 6th, physicians and their wives from all sections of the state created the framework and elected the officers and directors of an organization which is expected to add new force and meaning to the citizenship activities of physicians, their immediate families, and friends.

The parent organization of OMPAC is the newborn American Medical Political Action Committee.

The American Medical Association's House of Delegates at its meeting in Denver, November 27-30, offered official sanction to AMPAC, when a resolution was passed which stated: "The formation of AMPAC recognizes the need for a national medical political action committee to coordinate the political activities at all levels throughout the country."

Like AMPAC, which is separate and distinct from the American Medical Association, OMPAC has no official connection with the Oklahoma State Medical Association.

Purposes

In the constitution and bylaws of the Oklahoma committee, the purposes of the organization are outlined as follows:

"1. To promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs.

"2. To encourage physicians and others to understand the nature and actions of their government, as to important political issues, and as to the records of office holders and candidates for elective office.

"3. To assist physicians and others in organizing themselves for more effective political action and in carrying out their civic responsibilities.

"4. To do any and all things necessary or desirable for the attainment of the purposes stated above."

The statewide membership of OMPAC will be governed by a Board of Directors comprised of fourteen members, and one honorary. Twelve physicians are elected at the annual meeting of the organization to represent Oklahoma's six Congressional Districts (two from each district); two members of the Board are OSMA Woman's Auxiliary members, elected from among the feminine members of OMPAC; and one honorary Director, a medical student from the University of Oklahoma School of Medicine, is appointed by the elected Directors.

OMPAC will have two elected officers, a Chairman and a Secretary-Treasurer, as chosen by the Board of Directors.

Officers, Directors Named

During the ensuing year, the Oklahoma Medical Political Action Committee will be lead by Chairman Francis A. Davis, M.D., Shawnee; Director from the 4th Congressional District. Secretary-Treasurer of the group is Samuel R. Turner, M.D., Tulsa, representing the 1st Congressional District.

A complete roster of the Directors of OMPAC is printed below:

District 1: Worth M. Gross, M.D., Tulsa; Samuel R. Turner, M.D., Tulsa.

District 2: Hillard E. Denyer, M.D., Bartlesville; Tom S. Gafford, M.D., Muskogee.

District 3: Thornton Kell, M.D., Ardmore; Henry D. Wolfe, M.D., Hugo.

District 4: Francis A. Davis, M.D., Shawnee; Edward K. Norfleet, M.D., Bristow.

District 5: Edgar W. Young, Jr., M.D., El Reno; Dick Huff, M.D., Oklahoma City.

District 6: Leslie T. Hamm, M.D., Lawton; John W. Walker, M.D., Altus.

Medical Auxiliary: Mrs. Worth M. Gross, Tulsa; Mrs. John Johnson, Shawnee.

Honorary Director: George Halsey, Medical Student, Oklahoma City.

Dues

There are two primary classifications of membership in OMPAC—Active and Sustaining. Dues for 1962 are $20.00 for Active Members ($10 to OMPAC, $10 to AMPAC) and $109 for Sustaining Members ($10 to OMPAC, $99 to AMPAC).

OMPAC is organized as a voluntary, non-profit, unincorporated committee. It is not affiliated with any political party. □

Ribicoff Names Carlock As Advisor on Aging

J. Hoyle Carlock, M.D., President-Elect of the OSMA has received an appointment from Abraham Ribicoff, Secretary of Health, Education and Welfare, to serve on a twenty-one man national panel on aging.

In Ribicoff's letter to the Ardmore physician, he states: "HEW has many and diverse programs and resources relating to the well-being of older people. It is imperative, of course, that these programs be most effectively coordinated and these resources be most effectively utilized."

The panel will advise Ribicoff on policy matters related to programs on aging. □

County health leaders hear Major Charles Dutreau (USA-Retired) discuss "Chemical, Biological and Radiological Warfare."

One Hundred Attend 'Self-Help' Conference

Braving one of this winter's worst freezes, a hundred physicians, county civil defense directors and public health officials turned out January 21st for the OSMA's Disaster Medical Care Conference, a statewide meeting for the purpose of launching Oklahoma's phase of the national Medical Self-Help Training Program.

Developed and presented by Doctor Gifford Henry's Disaster Medical Care Committee, the program featured Congressman Ed Edmondson—"The Communist Mind"; Major Charles Dutreau — "Chemical, Biological and Radiological Warfare"; Mr. Dave Steen—"The U.S.P.H.S. Medical Self-Help Training Program"; and, Mr. Tom Brett—"Oklahoma's Plan To Teach the Medical Self-Help Course."

The purpose of the conference was to orient county health and civil defense officials in the new program, as well as to seek their cooperation in sponsoring the disaster preparedness training in the communities of their counties.

Medical Self-Help Training

The Medical Self-Help Training Program, developed by the Public Health Service in cooperation with the American Medical Association, is a 16-hour first aid course which is slanted toward preparing the civilian population to take care of itself following a major nuclear attack.

It is predicted that the effective nationwide implementation of the program will save millions of lives during the post-attack phase of modern warfare. The principle involved in the mass training program is one of national survival. Following a major nuclear exchange, there will be a two to three weeks period of isolation during which time surviving American families will have to protect themselves from gamma radiation as well as take care of their own injuries and illnesses.

Futhermore, the reorganization of medical services will be delayed by this isolation period, and hospitals will undoubtedly be mightily understaffed and equipped when they do become operational.

The first aid course will be taught by the use of a special instruction kit, containing complete equipment and materials necessary to teach eight two-hour sessions. Subjects covered are: Radioactive Fallout and Shelter; Hygiene, Sanitation and Vermin Control; Water and Food; Shock; Bleeding and Bandaging; Artificial Respiration; Fractures and Splinting; Transportation of Injured; Burns; Nursing Care of the Sick and Injured; Infant and Child Care; and Emergency Childbirth.

County Medical Responsibility

The program is now available to the counties of Oklahoma, on request of the county medical societies. At the meeting on January 21st, officers of county medical societies were supplied with packets of information on the course, complete with a sample press release to use in announcing application for the course.

Presidents of county medical societies and civil defense chairmen who were unable to attend because of the weather are being contacted by mail regarding sponsorship of the program. □

Oklahoma's Poison Information Programs

What appeared to be Oklahoma's loss of a Poison Information Center has developed into a more complete program on the emergencies arising from poisoning than ever before available to the physicians of the state. It was announced last Fall that the Oklahoma Poison Information Center, operated by the OU Medical Center, would close for lack of personnel and funds. Since then, announcements have been made that the state center would reopen and that a second operation would commence in Tulsa.

The State Health Department, with the cooperation of the Oklahoma State Medical Association, has salvaged the Oklahoma Poison Information Center and established headquarters at the State Health Department. Governor Edmondson made this possible by providing over $24,000 from his contingency fund. Almost simultaneously, a Poison Control Center was established at Hillcrest Medical Center in Tulsa. Concern on the part of state physicians over the impending loss led to the development of both programs.

The Oklahoma Poison Information Center which was opened in 1956 was one of the first in the nation to be established. The center developed rapidly under the guidance of Doctor Harold Shoemaker who devoted much time, effort and thought to the facility, but after his death in 1960, the center became dependent on the voluntary efforts of a few physicians. When necessary aid was no longer available, the operation had to cease.

Oklahoma Poison Information Center

All physical equipment of the Poison Information Center, formerly located at the University of Oklahoma Medical Center, has been moved to the State Health Department Laboratory. Proposed plans are to operate the center under the Laboratory Director, F. R. Hassler, M.D., and a full-time Bio-Chemist. Laboratory facilities to do certain analytical pro-

HEALTH SCIENCES LIBRARY
UNIVERSITY OF MARYLAND
BALTIMORE

cedures that have not been performed in the past are planned.

A secretary will be on duty at the center to assist the chemist in keeping information cards up to date, make new sets of cards as needed, to accept calls and carry on the routine procedures of the center. Duplicate sets of cards will be established at another location, to be announced later, where holiday and night calls will be received. Around-the-clock service will soon be available to all Oklahoma physicians.

Hillcrest Poison Control Center

With the closing of the original Oklahoma facility, Tulsa's Hillcrest Medical Center met the need by organizing a Poison Control Center which was immediately approved by the Oklahoma State Health Department and the United States Public Health Service.

Although this center is not proposed to act as an information center for the entire state, it will materially aid physicians of northeastern and eastern Oklahoma. In addition to the information which is available at the center, the Tulsa program provides diagnosis as well as treatment. Data is obtainable by telephone to physicians only and will be given by the intern staff of the emergency room of the hospital on the basis of file cards supplied by the National Clearing House for Poison Control Centers.

Treatment will be administered by physicians of the Hillcrest Medical Center staff and of the house staff. Diagnosis on unknown toxic agents will be procured through the services of a chemist who is on the staff of the Department of Pathology of Hillcrest Hospital. In addition, statistical data will be obtained through the United States Public Health Service by mailing the appropriate forms listing the various cases which have been under observation.

Walter Sethney, M.D., has been named Director of the center and Leo Lowbeer, M.D., Associate Director.

The telephone number of the Oklahoma Poison Information Center is GArfield 7-2421 (Oklahoma City) and the Hillcrest Poison Control Center may be reached at LUther 4-1351, Extension 598 (Tulsa). □

Regional Postgraduate Courses Continue To Be Popular, Ada Meeting Next

Thirty Southern Oklahoma physicians turned out for the OSMA Postgraduate Education Committee's fifth regional postgraduate course, held at Lake Murray Lodge, January 30th.

Like its predecessor in Chickasha, the Lake Murray program was on "'The Kidney." Speakers were W. O. Smith, M.D.; Robert Lindeman, M.D. and John P. Colmore, M.D., all of the OU Medical Center. Subject matter for the evening included "Renal Functions," "The Kidney and Electrolytes," "Acute Renal Failure," "Pyelonephritis" and a problem case conference.

The regional programs, designed by the OSMA committee and the OU Medical School, follow the same basic format—basic science, diagnostic and therapeutic considerations of principle organ systems. They begin at 4:30 p.m. and conclude around 9:30 p.m., with dinner provided in the registration fee of $7.50. The Oklahoma Chapter of the American Academy of General Practice grants four hours credit (Category I) for each OSMA course.

Lake Murray Meeting

Local arrangements for the Lake Murray meeting were handled by Roger Reid, M.D., Ardmore. Participating in the session were the following registrants: Hartzell V. Schaff,, M.D., Holdenville; T. A. Trow, M.D., Holdenville; J. F. York, M.D., Madill; Pat Lawson, M.D., Marietta; C. N. Talley, M.D., Marlow; R. C. McDougal, Holdenville; M. E. Robberson, M.D., Wynnewood; J. Hoyle Carlock, M.D., Ardmore; John D. Jennings, M.D., Hugo; I. J. Hougen, M.D., Ada; Raymond Engles, M.D., Durant; C. P. Taylor, M.D., Ada; E. S. Bell, M.D., Tishomingo; R. R. Hannas, M.D., Sentinel; and Frank Clark, M.D., Ardmore.

Malcolm Horne, M.D., Ardmore; L. E. C. Joers, M.D., Ardmore; Ethel M. Walker, M.D., Ardmore; Alfred T. Baker, M.D., Durant; John Adair, M.D., Ardmore; W. L. Savage, M.D., Ardmore; Robert E. Cowling, M.D., Ada; J. Hobson Veazey, M.D., Ardmore; E. C. Lindley, M.D., Duncan and Otey Johnson, M.D., Ardmore.

Next Meeting—Ada

The sixth meeting in this year's series of eight decentralized courses, will be held February 27th at Valley View Hospital, Ada. Orange M. Welborn, M.D., Ada, is planning the course locally.

An instructional team consisting of Merlin K. DuVal, M.D., Robert A. Schneider, M.D., and Jack D. Welsh, M.D., will discuss "The Colon." Topics include: "Physiology," "Functional Diarrhea and Constipation," "Diverticulosis and Diverticulitis," and "Polyps and Neoplasms." Concluding the program will be a problem case conference on "Ulcerative Colitis."

Remaining Courses

Scheduled for the remainder of the Spring are courses at Western Hills Lodge, Sequoyah State Park, and Miami, Oklahoma. The course on "The Colon" will be repeated at Western Hills and the Miami program will be on the subject of "The Lung." □

Social Security Facts

Writing in JAMA of the distortion and misrepresentation of the social security program, Ray M. Peterson, vice-president of the Equitable Life Insurance Society of the United States, had this to say.

"People are being given the mistaken impression that social security benefits are paid out of accumulated reserves similar to private insurance programs, where the truth is they are financed almost entirely on a pay-as-you-go basis, with benefits paid out of current income." □

OSMA Trustee E. K. Norfleet, M.D., (left) is shown presenting J. E. Hollis, M.D., Bristow, with an Honorary-Life Membership Certificate.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

Two Oklahoma Physicians Honored

J. E. Hollis, M.D., Bristow, and B. M. Huckabay, M.D., Antlers, were recently honored by the Oklahoma State Medical Association when they were awarded an Honorary-Life Membership and a Fifty-Year-Pin, respectively.

Recognizing his years of service and devotion to the medical profession, the OSMA House of Delegates approved the honor for Doctor Hollis at the 1961 Annual Meeting in Tulsa. Presentation of the award was made by OSMA Trustee E. K. Norfleet, M.D., Bristow, at a special meeting of the employees of the Bristow Memorial Hospital in January. The long-time Bristow physician has limited his practice to E.E.N.T. He has served as a Councilor to the OSMA.

For over half a century of loyal medical service Doctor Huckaby was awarded a Fifty-Year-Pin at the regular meeting of the Choctaw-Pushmataha County Medical Society on November 14 in Antlers. W. A. Hyde, M.D., OSMA Trustee from Durant presented the Pin to Doctor Huckaby.

Honorary-Life Memberships are awarded to any physician-member of the association, who, by reason of ill health or age retires from active practice of medicine, provided the physician has been a member for five years or more, immediately preceding the award. Fifty-Year-Pins are awarded to those who have been engaged in the active practice of medicine fifty years or more. □

B. M. Huckabay, M.D., Antlers, (left) receives a Fifty-Year-Pin from W. A. Hyde, M.D., Durant.

OSMA JOURNAL / *deaths*

ALFRED R. SUGG, M.D.

1894-1961

Alfred R. Sugg, M.D., President of the Oklahoma State Medical Association in 1952-53, died in Ada, December 16, 1961.

A native of Belleville, Yell County, Arkansas, Doctor Sugg graduated from the University of Arkansas School of Medicine in 1925. He established his practice in Ada, later specializing in urology.

A pioneer in the operation of clinics, he opened the Sugg Clinic in 1933, an organization which is now housed in a four-story building with a staff of fourteen physicians.

Doctor Sugg was an active civic leader and maintained a keen interest in all medical activities. He was a Diplomat of the American Board of Urology, a Fellow of the International College of Surgeons, and a senior Fellow in the Southwestern Surgical Congress. □

STRATTON E. KERNODLE, M.D.

1894-1962

Oklahoma City physician, Stratton E. Kernodle, M.D., died January 26, 1962.

Born in Knob Noster, Missouri, Doctor Kernodle came to Oklahoma City where he graduated from the University of Oklahoma School of Medicine in 1919.

After taking his internship at St. Anthony Hospital, he entered private practice in Oklahoma City.

P. K. GRAENING, M.D.

1900-1962

P. K. Graening, M.D., 61-year-old Oklahoma City physician, died January 6, 1962.

Born in Waverly, Iowa in 1900, Doctor Graening graduated from the University of Iowa School of Medicine in 1926. He came to Oklahoma City later that year and did clinical work before entering private practice in 1945. In 1955, he accepted an appointment with the Veterans Administration Hospital, a position he held at the time of his death.

Doctor Graening was a member of the Oklahoma Chapter of the American Academy of General Practice. Active in medical circles, he was a Past-President of the Oklahoma City Clinical Society.

S. E. FRIERSON, M.D.

1879-1962

S. E. Frierson, M.D., 82-year-old Oklahoma City physician, died January 4, 1962.

A graduate of Tulane University School of Medicine, Doctor Frierson's specialty was surgery.

In recognition of his years of devotion to the medical profession, the Oklahoma State Medical Association honored Doctor Frierson in 1957 by awarding him a Life Membership. □

ROBERT J. BOGAN, M.D.

1899-1961

Robert J. Bogan, M.D., 63-year-old Bartlesville surgeon, died December 19, 1961 in Bartlesville.

In 1929, Doctor Bogan graduated from Georgetown University School of Medicine, later establishing his practice in Bartlesville.

Interested in medical activities, he was a Past-President of the Washington-Nowata County Medical Society.

MISCELLANEOUS ADVERTISEMENTS

DESIRE LOCATION in OB-GYN, available July, 1962, board eligible, age 28, married. Contact Gregory A. Green, M.D., 1923 South Utica, Tulsa, Okla.

LOCATION WANTED: Graduate of Georgia, 1958, 31 years old, married, have completed three years of approved residency in OB-GYN, presently serving as Chief Resident at Baroness Erlanger Hospital, Chattanooga, Tenn. Contact Robert J. Henderson, Jr., M.D., 3632 Weldon Drive, East Ridge, Tenn.

OFFICE SPACE FOR RENT. Medical or Dental. Air conditioned. Reasonable rent. Hospital area. 437 N.W. 13th, Oklahoma City. Call (days) CE 5-6461.

BIG SAVINGS ON "RETURNED-TO-NEW" and surplus equipment. Reconditioned, refinished, guaranteed. X-Ray, examining tables, Autoclaves, ultrasonics, diathermies, microscopes, OR tables, OR lights, and more. Largest stock in the Southwest. Used Medical equipment WANTED. TEX-RAY CO., 3305 Bryan, Dallas. (Open to the profession Wednesdays, Thursdays, 9-5. Other hours by arrangement.)

G.P. WANTED: General practice clinic in Oklahoma City metropolitan area. Salary plus percentage. Give training, experience and religion first letter. Box 183W, Oklahoma City, Oklahoma.

PHYSICIAN EXPERIENCED in general practice, insurance and industrial work wishes opening in solo or group practice, school, industrial, institutional or government work. Contact Key F., The Journal of the Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

SURGEON DESIRES practice opportunity in Oklahoma. Graduate University of Virginia, 1952, Board Certified. Residency training at Sloan-Kettering Institute, University of Virginia Hospital and Lahey Clinic, Boston. Contact Euclid Murden Hanbury, Jr., M.D., 1500 Amherst Street, Charlottesville, Virginia, Telephone 6-1000.

Auxiliary members can name February "Month of the Second Wind," without bowing to the ancient Chinese. Few things seem so chaste and unconfused as the month of January at first glance. But when February, short month that it is, looms before us, it is time for each county auxiliary to take stock, to draw upon the second wind, and to make final effort. This is essential, not only for individual satisfaction, but particularly for auxiliary accomplishment—successful reports for our May meeting.

Perhaps if we called our board meetings and our annual meetings "Stockholders' Meetings," we might impress their importance upon our membership and insure better attendance. Each meeting held is an attempt by our president to provide opportunity to evaluate our holdings and to declare our dividends. True, actual money is not involved. Most of us, however, feel that our time and interests are of great value.

At the Mid-Winter Board Meeting, January 15, Mrs. Pat Fite, Sr., State President, introduced Mrs. Delbert G. Smith, Oklahoma City, General Chairman for the State Convention, May 5, 6, 7, 1962. Plans and schedules are different and exciting this year. Circle your calendar now.

Briefly, we are reminded by State Chairman of the following facts. AMEF county chairmen need to remind members constantly of the importance of continuous contributions and donations. (Our national quota is $5.00 per member as a minimum.) Checks should be made to: "AMEF—Auxiliary Fund," ear-marked for the school of your choice (which we hope is the University of Oklahoma) and mailed to your local or to the state AMEF Chairman. These contributions are tax-deductible.

Revisions of by-laws will be presented at our May meeting; study them carefully. Mrs. Neil Woodward, past National Civil Defense Chairman, explained the new Medical Self-Help program, a simplified procedure with slides and projector, which will soon be available to all communities. Community Service remains one of the strongholds in our work, and the chairman emphasized importance of its promotion. (In the past we have repeatedly stressed the inter-relationship of personal service with good public relations. These services are our stronghold in every community.)

Southern Medical Auxiliary was well represented at our meeting. Mrs. Elias Margo, President-Elect, and Mrs. Virgil Ray Forester, Councilor, added emphasis and impetus to interest in Doctors' Day. You still have time to contact our State Chairman if you need additional ideas or information.

Doctors' Hobbies Chairmen are reminded to start now, promoting interest in exhibiting the diverse interests of busy doctors and their wives. Legislation Chairmen are reminded to keep a complete record of letters and communications to Washington. There will be heated months ahead. Records of *Operation Coffee-Cup* are being circulated among civic groups all over the state.

Always high among each year's projects in promotion, interest, and future results is our Recruitment or Health Careers program. The Sixth Annual State Nurses' Day (including all allied paramedical careers) will be held March 24th at the Oklahoma Medical Center. Plans are almost completed for this event, and information will be sent to each organization.

New handbooks, which will familiarize incoming officers and chairmen of duties and work plans, are being compiled this year. These have long been needed, and we are grateful to members working on the committee. In summary, we are indebted, as an organization, to all of the women who understand their responsibility and contribute so much to these meetings.

Happy "second wind" to each county—and may your next few months be active and challenging. □

OSMA JOURNAL / *the last word*

An Oklahoma City orthopedist is Vice-President of the American Academy of Orthopaedic Surgeons. Don H. O'Donoghue, M.D., was named to the office at the recent meeting of the national group.

Tom C. Points, M.D., Oklahoma City obstetrician-gynecologist, was appointed to a top-level job by the Surgeon General, U.S. Public Health Service. He is Special Consultant for Obstetrics in the new Medical Self-Help Training Program, a gigantic civil defense education project of the USPHS, Division of Health Mobilization.

With the King-Anderson Bill Threatening, and election-time drawing near, F. J. L. Blasingame, M.D., AMA Executive Vice-President, issues a timely reminder for all physicians . . . to reread Section 10 of the AMA's Principles of Medical Ethics:

"The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community."

1962 OSMA Directory will be published next month, containing straight alphabetical listing of all association members and a breakdown by county medical societies. To assure accuracy, all members are urged to check name, address and biographical data as appeared in the 1961 issue and report any corrections to the Executive Office immediately.

Annual Meeting Resolutions must be considered at the March meetings of county medical societies and submitted to OSMA Executive Office by April 5th, thirty days prior to the annual meeting of the House of Delegates. Consider such subjects as: Seat belts, health care income tax credits for the aged, polio vaccine, foreign physicians, fallout shelters, public relations, costs of medical and hospital care, relationships with third party payment plans, health care of the aged, annual meeting, citizenship, health insurance and voluntary prepayment plans, medical education, professional ethics, postgraduate education, public health, relations with other healing arts professions, mass immunization programs, international health, state and federal legislation.

AMA recently surveyed M.D.'s on the practice status and standards of chiropractors. Now, the National Chiropractic Association is checking up on physicians by bulletinizing its members with such queries as: "Do you know of any instance of unqualified medical doctors attempting to give spinal manipulations or chiropractic adjustments to patients?" And how about this one? "State all instances of M.D.'s in your area using fraudulent devices or instruments which have been condemned as medical quackery by the Food and Drug Administration in Washington, D.C."

Nolen L. Armstrong, M.D., Oklahoma City, was named President-Elect of the Oklahoma Chapter of the A.A.G.P. during the family physicians' recent statewide meetings. President for the coming year is William R. Cheatwood, M.D., Duncan.

The image of Medicine? In his retirement notice to patients and friends, W. P. Neilson, M.D., Enid, announced that his books will be closed on March 15th with all outstanding accounts marked "paid".

MEETINGS

February 27	OSMA PG Course "(The Colon") Valley View Hospital, Ada, Oklahoma
March 3	OU Short Course ("Hormone Therapy in Obstetrics, Gynecology and Allied Diseases") Medical Center
March 5-10	Basic Course in Electrocardiography-Medical Center
May 5-7	OSMA Annual Meeting, Oklahoma City

..... a memo from and

published by oklahoma blue cross - blue shield, here's....

HOW HAS COUNTY-RATING WORKED? FEBRUARY 1962

In August, 1958, the first of 77 counties went on the new "County-Rating" basis for their local Blue Cross-Blue Shield dues. This was a new system of rate-setting for Blue Cross-Blue Shield members, but it was merely an adaptation of existing area rate-setting policies of automobile, fire and casualty insurance companies. Dues are adjusted upward or downward after each 12-month period commensurate with the utilization percentage within each county.

Adoption of this system for Blue Cross-Blue Shield dues was approved by the State Insurance Commissioner. All Member Councils scrutinized the plan and approved it. It was also personally explained to 31 County Medical Society meetings that year, and an article on the subject appeared in the Journal.

Now that each county has been "standing on its own" for at least $2\frac{1}{2}$ years, what effect has the system had on the dues, and new members?

1961 Employed Group Dues

25 Counties increased dues by 45% or more
22 Counties increased dues by 30%
19 Counties increased dues by 15%
10 Counties' dues remained the same
1 County's dues decreased by 15%

1961 Non-Group Dues

15 Counties increased dues by 45% or more
26 Counties increased dues by 30%
30 Counties increased dues by 15%
5 Counties' dues remained the same
1 County's dues decreased by 15%

Among existing Employed Group family dues in the state in 1961, the lowest available are $8.70 per month.....the highest, $21.70. The median is $15.20 per month. During the past year, 355 new employed groups were enrolled. However, 293 of them were enrolled in counties where the dues were below the state median. Only 62 were enrolled in counties where the dues were above the median. Resistance to rising dues in high utilization counties appears to be a major influence on enrollment.

(a supplement to the Journal of the Oklahoma State Medical Association)

The JOURNAL of the Oklahoma State Medical Association

MARCH 1962
Vol. 55/No. 3

EDITORIAL BOARD

BEN H. NICHOLSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

C. B. DAWSON, M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

CLINTON GALLAHER, M.D.
President

J. HOYLE CARLOCK, M.D.
President-Elect

PETER E. RUSSO, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DICK GRAHAM
Business Manager

DON BLAIR
Associate Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

Don't You Believe It 71
Blue Shield Plan for the Elderly 73
Practical Applications for Postgraduate Education . . 74
President's Page 76

scientific

Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach, *Donald D. Albers, M.D. and Philip L. Stephenson, M.D.* 77
Fluid and Electrolyte Balance Clinical Case Analysis, *Lester I. Nienhuis, M.D., F.A.C.S.* 79
Allergic Reactions to Low Environmental Temperature, "Cold Allergy," *Leon Horowitz, M.D.* 82
Fiber Optics, *Virgil Ray Forester, M.D.* 87
Heart Page, *Nazih Zuhdi, M.D., John M. Carey, M.D. and Allen E. Greer, M.D.* 90

medical center

Dean's Message 91
Tuberculosis of the Liver, *Edward N. Brandt, Jr., M.D. and Philip L. Stephenson, M.D.* 92
Computers in Modern Medicine, *James A. Hagans, M.D., Ph.D. and William W. Schottstaedt, M.D.* 96
Faculty News 98

news

Put It In Writing 100
'Investment Planning' Topic For Annual Meeting . . 104
Physical Scientists To Join Medical Scientists in Research Problems 105
CD Health Mobilization Course—March 28-30 . . . 105
Bankers Service Life Indicts M.D.s, Hospitals 107
Five OSMA Scholars Selected 107
Letters to the Editor 107
Deaths 108
Miscellaneous Advertisements 108
Index to Advertisers l
Auxiliary li
The Last Word lii

...WITH 'METHEDRINE' SHE CAN HAPPILY REFUSE!

Controls food craving, keeps the reducer happy — In obesity, "our drug of choice has been methedrine . . . because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West.J.Surg. 59:238 (May) 1951.

'METHEDRINE'®

brand Methamphetamine Hydrochloride

Supplied: Tablets 5 mg., scored. Bottles of 100 and 1000.

Literature available on request.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

Don't You Believe It

KING-ANDERSON BILL advocates, such as Secretary of HEW Ribicoff and UAW's Walter Reuther, are frequently at a loss for a cogent argument to support their views. So, they resort to an old debater's trick and smokescreen the issue by attacking their opponent—in this case, the American Medical Association.

They say the AMA has opposed everything progressive, including all social legislation, since the beginning of time, and that the organization has contributed nothing to the welfare of America. Then, supposedly responsible communications media, the *Saturday Evening Post* as a notable recent example, are blinded by the smokescreen and print irresponsible, undocumented and false attacks against the AMA.

There's nothing wrong with justified criticism—it's part of our way of life—and if used properly, a desirable manifestation of a healthy, free press.

What's wrong is, in this case, too many writers are playing into the hands of the liberals, smokescreening the real issue with unwarranted attacks on the AMA; attacks which are untrue in the first place, not to mention the fact that, truthful or otherwise, they have no place at all in an objective argument of the merits of the King-Anderson Bill.

What's worse, the AMA, an organization which has contributed so much to America's World leadership in health, is being discredited in the public's eye.

What's still worse, is that altogether too many physicians are reading this junk and believing it!

The King-Anderson conflict must be decided upon the pertinent facts of the case. Circulation-seeking editorialists are not helping the situation by cooperating in diversionary tactics designed to hoodwink the American people into socialism.

Don't be confused by the smokescreen laid down by our clever opponents—and don't believe everything you read!

LARSEN ANSWERS FUOSS

February 6, 1962

Mr. Robert Fuoss, Editor
Saturday Evening Post
The Curtis Publishing Company
Independence Square
Philadelphia 5, Pennsylvania

To the Editor:

In your editorial of February 4th—"The Doctors and the A.M.A."—you demonstrate a lamentable lack of information about the medical profession in this country.

The editorial was packed with errors of fact. Although in one or two instances you did see fit to pay tribute to medicine's history of achievement, its devotion and dedication to the service of the people, we cannot reconcile this faint praise with the strong indictment of the medical profession rampant throughout the remainder of the editorial. One illustration will serve to document our protest against your inaccuracies.

You said: "The doctors as a group have in essence been against almost everything that America is for—and usually because the suspicious eye of the American Medical Association espied the bugaboo of socialized medicine beneath every new proposal."

This is a shocking statement. The more so because it is completely false.

If you had cared to do the painstaking research that made the *Post* famous under your predecessors, you could not possibly have made such a charge. The entire 115 year history of the American Medical Association is noteworthy for its record of medical progress; for its devotion to the needs of the public health; for its constant progress in furthering higher standards of medical ethics; the constant improvement of the science and art of medicine for the benefit of

the patient. It would take far more space than you would grant to list, even partially, the record we are so very proud of owning.

For example, many of the advances in nutrition and health care that you now take for granted—iodized salt, enriched flour, milk fortified with vitamin D, canned baby foods, and countless others—came about because of direct or indirect action of the American Medical Association. Fifty years ago the A.M.A. urged the creation of a Department of Health in the President's Cabinet—now known as the Department of Health, Education and Welfare; the A.M.A. urged creation of the U. S. Public Health Service, the Federal Food and Drug Administration, health departments at the State level.

Somehow or other we think that America is for these things—as medicine was for them. These and so many others.

Your lack of research is amply demonstrated when you make the statement: "The A.M.A., for example, opposed hospitalization insurance." How wrong can you possibly be? Since 1917 the A.M.A. is on record, documented record, sir, of encouraging and assisting in the development of voluntary health insurance.

The A.M.A. confesses to being concerned with the threat of socialized medicine in this country. We take the stand that nothing, not even government, should come between the patient and his doctor if the patient and medicine are to be properly served. We consider socialized medicine not a "bugaboo," as you put it—we consider it a real danger to our American way of life.

Nor do we see it in every proposal that arises; the record shows (if you care to consult it) that over the years the A.M.A. has supported far, far more legislation than it ever opposed.

The issue involved in the controversy which prompted your hasty editorial is not health care for the aged. Let all who read this be very sure of that. Everyone is in favor of assuring not just the aged, but all citizens, the health care they require.

The issue, quite simply, is how this care shall be provided.

The American Medical Association believes this care should be provided by voluntary methods wherever possible with government assuming responsibility *only* where all other methods fail. We do not believe the tax resources of the American people should be used to purchase medical care for those who are willing and able to provide for themselves.

The American Medical Association believes that the relationship between patient and physician is a sacred one; essential to the welfare and health of the patient, necessary to the practice of good medicine.

We believe the majority of the American people will agree with our stand.

LEONARD W. LARSEN, M.D.
President
American Medical Association

cc: Mr. Robert E. MacNeal, President
Mr. Edward C. Vontress, Senior Vice President
The Curtis Publishing Company

ANOTHER LOSS TO MOURN

(The Ellsworth (Kansas) Messenger, January 29, 1962)

What's happened to the *Saturday Evening Post* some of my friends are asking?

What happened? The *Post* changed editors and in the process changed editorial complexion from the blended hues of Midwestern red, white and blue to the bloodshot pink of liberalism's fantasy world.

Kansas conservatives like myself, mourning the loss of a conservative senator, might mourn the more for loss of a conservative voice in the Great *Saturday Evening Post*. The *Post* was one of the last frontiers of conservatism in the big time journalistic field. It wielded a mighty influence. And now it is just another syrupy voice for the liberal left.

Post Editor Fuoss zeroed in on doctors and the American Medical Association last week. In typical liberal manner he wiped out argument by simply stating that no ground for argument exists. There aren't two sides, there is only our side, so say the liberals. He calls attention to the increase in malpractice suits, which makes me think it is too bad there isn't a legal recourse for editorial malpractice. The liberals could be sued right out of their socialistic pants.

The Fuoss editorial on the A.M.A. is a perfect example of the liberal attack. All the way through Fuoss beats words together in clamorous assertion of appreciation of the great contribution doctors have made, are making and will make to the world at large (far, far greater, be it confessed, than the Fuoss ilk ever did or ever will). With his love of the Dr. Kildares and semblance of fairness established he moves in for an operation of his own and with surgical skill proceeds to perform a bloody characterotomy on the medics and their national organization, the A.M.A.

He cites the doctors for having been opposed to everything, including medical insurance—no proof, and utterly unprovable because it is untrue. Then, with grand sweep, completely cutting away all vestige of historical facts, he remarks, "The doctors as a group have in essence been against almost everything that America is for." How "mal" in practice can you get, Mr. Fuoss, one wonders? This is the essence of what surely will be known later as the Great Smear Age.

I know four doctors here in my home town and have known many more over state and nation and I have never known a single one of whom it wouldn't be rank libel as well as gross untruth to state that he is against everything America is for. On the contrary, the men I know have been against the socialistic fungus that is trying to destroy America, and have been for the great glory of American individual initiative, independence, self-reliance, honesty in financial matters, personal and governmental; have been steadfast in faith that the climate of freedom holds assurance for higher living standards, more of security and needed medical attention for everyone than any other system on earth.

The *Post* editor shows that he is a disciple of that fastidious liberal practice of the great lie told in mild voice as if here is something so obvious no one needs shout about it. "So far as we know," says Fuoss, with tranquilizing calmness, "there is no serious support anywhere in America for anything resembling socialized medicine."

Oh, brother! How big can even a big lie be! Of course, Editor Fuoss goes on next to assert that the mis-called Medicare bill is just a simple prescription of old fashioned Americanism to be taken regularly each morning before breakfast.

But enough said. Let's leave our doctors on the operating table, cut open from conviction to patriotism, from ideal to love of freedom. Mr. Fuoss has said he loves them, admires and respects them so surely he will see to it that only a few infected sponges and surgical instruments are left inside for festering before sewing up the gaping wounds he has inflicted.

We readers carry away with us the implanted suggestions that socialism is really Americanism of higher order, that regimentation with free medical service is "responsible statesmanship," and that all would be for the best in this best of all liberal worlds if the docs would start communizing their attitude and the A.M.A.

Heil, liberalism! □

Blue Shield Plan for the Elderly

JANUARY 18, 1962 can be dated as a milestone in the recorded history of 1962. On that date was released the news of the formation and approval of a Nationwide Blue Shield Plan for providing surgical and medical care benefits to all persons over 65 years of age.

This was not brought forth hastily, but represented the culmination of many efforts, studies and meetings by the various agencies involved. It had been presented to the AMA and carefully gone over, with the result that all the Component Medical Societies of the AMA were notified to immediately contact the State and Local Blue Shield Plans and to cooperate with them in every manner possible.

This plan has latitude for providing all citizens 65 years and over with surgical and medical services. For those whose annual income is $2500.00 per person, or $4000.00 per married couple, the plan provides for complete payment of the services. For those whose income is above those levels, the plan will pay on an adjusted basis.

The scope is nationwide and will be applicable in any state with the same benefits. The local plans will be the Administrative Units.

This plan is an American way to prepay the coverage of medical services. It is a plan whereby the patient preserves his individual dignity, choosing his own physician. It is a plan whereby the Medical Profession is showing to the Nation, that they are cognizant of the changing times and that they have developed a solution for providing the best of medical services to our "Elder Citizens."—*John F. Burton, M.D.* □

Practical Applications of Postgraduate Education

The Use of Postgraduate Medical Education in Solving Problems of Public Health

POSTGRADUATE medical education is offered to improve medical knowledge among physician-students in any of the many areas of medicine with the hope that sooner or later all the fields will be covered and that eventually all physicians will be reached. Unfortunately neither happens. There is often much repetition of subjects—this because of popularity of a given subject, funds available for teaching certain subjects, numerical and economic superiority of some sponsoring organizations, and failure on the part of planners to cover all medical specialties in a given period of time.

Furthermore, postgraduate education is offered on a volunteer basis and too often the same group of physicians forms the majority in attendance at courses in any given location. Interest, time available, location, and type of practice are prime factors here.

The Regional Postgraduate Courses offered by the Oklahoma State Medical Association and the University of Oklahoma Medical School, organized as they are around the organ systems of the body, are an effective method of meeting some of the problems and of reaching a great number of practicing physicians with more complete medical instruction.

It is apparent, however, that postgraduate education facilities in their broader consideration, may also be used to solve certain public health problems, two examples of which are now presented with suggested solutions.

THE PROBLEMS

(1) Maternal mortality in Oklahoma can be diminished.
(2) Infant mortality in the perinatal period in Oklahoma is higher than it might be.

These two problems are chosen, but any of numerous similar problems might be selected. Neither is confined to urban or rural areas and neither is peculiar to small or large hospitals.

Assuming that medical education in the two specialties involved is the most effective means of combating this problem, and realizing that a large segment of our physicians must be reached with added information and training (obstetricians, pediatricians, and general practitioners especially), how then can programs be developed to reach the groups concerned under a voluntary system?

THE MEANS AVAILABLE

Presently available facilities for postgraduate education in our State include the following:

(1) Short courses at the University Medical Center
  (a) Wednesday afternoon short courses.
  (b) Other courses of varying lengths, usually one to three days.
(2) Specialty group meetings, including AAGP, ACS, Heart Association, Oklahoma City Clinical Society, etc.
(3) Scientific sessions of the OSMA Annual Meeting.
(4) Regional Postgraduate courses
(5) TV Programs (Educational channels)
(6) County Medical Society meetings
(7) Hospital staff meetings
(8) Departmental meetings at University Medical Center
  (Medical and Surgical Grand Rounds, Chest conferences, VA Conferences, Neurocardiology Rounds, Gastroenterology Rounds, etc.)
(9) *Journal of OSMA* and other publications.

THE RECOMMENDED SOLUTION

Obviously a "crash" type program to disseminate the information necessary to improve maternal and infant care might utilize *all* of the facilities listed above. Considerable duplication would result and the future of several of the more voluntary programs would be adversely affected if eggs were laid in the form of some uninteresting and/or repetitious programs. Limited numbers are served by (1), (2), (3), (5), (7) and (8). Wide as the distribution is of (9) we have not too clear an idea as to how many read the scientific articles. County Medical Society meetings (6), reach practically all the physicians in the State.

By means of qualified lecturers and question and answer sessions, information helpful in improving our maternal and infant care records can be disseminated at County Medical Society meetings. Funds are available to supply these lecturers, and the limitations in speed in dissemination are the number and locations of county medical societies.

Simultaneous scientific articles in the *Journal of the OSMA* (9) might supplement the above coverage as could discussions at Hospital Staff Meetings (7).

In this manner, places and people responsible for the poor record of this state in the two fields cited may be contacted and improved methods of handling the problems can be taught. This should improve the situation.

The desirability of the voluntary recognition of these public health problems by our State Medical Association and the voluntary attack thereon by our members cannot be overemphasized. If all such problems were recognized, attacked, and solved voluntarily by the physicians of the State we would minimize the threat of socialized medicine which is ever present when we abandon such problems to the Public Health Department, be it state or federal. It is important that we in organized medicine take the positive approach, especially when we have the means available.

Other problems in the field of public and private health may be met in similar fashion, utilizing existing facilities or creating more as needed—without asking the "government" to take over.

PROPOSAL

To save the above thoughts from becoming lost in the maze of frontal lobe perambulations which monthly grace the pages of our various periodicals, and to insure that we take what measures we can to save the lives of Oklahoma mothers and babies, it is proposed that during the next two years every County Medical Society in the State agree to hold a scientific session on *each* of these subjects—Maternal Mortality and Perinatal Mortality.—*R. R. Hannas, M.D.* □

LEGISLATIVE BRIEFING SESSIONS BEGIN

Staff members of the O.S.M.A. Executive Office are now undertaking the conduct of fifteen regional briefing sessions on the legislative campaign to defeat H.R. 4222, the King-Anderson Bill. Under the direction of the association's Federal Legislative Committee, the staff men will meet with representatives of county medical societies and outline the committee's plans to combat the legislative measure.

The OSMA's approach, to be primarily implemented at the county society level, has four objectives: (1) To obtain resolutions from other organizations in support of medicine's position; (2) To develop and use speaker's bureaus at the local level; (3) To establish favorable press relations; and (4) To initiate and maintain an effective, large-scale congressional letter-writing campaign.

Writing to Washington is not just an acceptable social pastime—it's a responsibility to be honored and cherished by every citizen in a Democratic society.

After all, representative government means just that. If our Washington representatives are to vote the convictions of their constituents—that's you and I and our friends and neighbors—we must let them know how we feel. There are other ways of doing it, but when large-volume response is in order, letter writing is the most practical approach.

If enough of us—medics and non-medics alike—express our convictions *en-masse* and present logical facts to support our case, the lawmakers *must* commit themselves to our position. Should they ignore the folks back at home, we'd better look around for "representation."

The foregoing, I'll admit, is an overstatement of the obvious. But *knowing what should be done* and *doing it* seldom run hand-in-hand. We are facing a severe test on the King-Anderson Bill (H.R. 4222), and too many of us are sitting around speculating on the outcome of the controversy without doing anything to guide our elected representatives.

A letter writing campaign is outlined on pages 101, 102 and 103 of this issue. If every physician and his wife will cooperate in the program—and ask their friends for help—our voice in Washington will not only be audibly discernible, it will become a lion's roar! We have many friends on the issue of H.R. 4222, but their interest cannot be marshalled into an effective campaign unless you and I and our wives take the leadership. Up 'til now most of us have defaulted in leadership; we're just "making book" on how the H.R. 4222 issue will come out.

The plan is simple. Send two letters to Washington each month yourself and ask ten friends to do the same. Lest they forget, send them a reminder each time a letter is due.

If all of us (wives included) would take this degree of active leadership, it would be possible to flood Washington with 70,000 letters a month.

Let's do it! As AMA President Leonard Larsen said recently, "What we need is fewer bookies and more jockeys."

Clinton Gallaher M. D.
President

OSMA JOURNAL / scientific

Metastastic Carcinoma of the Prostate From Silent Carcinoma of the Stomach

A Case Report

DONALD D. ALBERS, M.D.
PHILIP L. STEPHENSON, M.D.

Young man with minimal symptoms and a huge rectal mass which felt like advanced carcinoma of the prostate found to have silent carcinoma of stomach as source.

ALTHOUGH extrarectal pelvic masses occasionally result from silent carcinomas of the stomach,[1] for such a mass to suggest carcinoma of the prostate is most unusual. We found reports of only two such cases in our review of the literature.[2, 3] In the first report, metastasis occurred following operation for carcinoma of the stomach, and in the other a table of metastasis from mucoid carcinoma of the stomach includes one mention of spread to the prostate. The case to be reported seems unique since involvement of the prostate was the first clinical manifestation of gastric cancer.

CASE REPORT

The patient, a well-nourished 40-year-old white man, was first seen in the clinic on July 1, 1960. He complained of lower abdominal soreness, rectal discomfort, nocturia, and mild dysuria. The previous month he had reported these symptoms to his family physician,* who referred him to the clinic after making a rectal examination. The only other significant feature in this patient's history was that in 1957 he had complained of symptoms suggestive of an ulcer. However, the findings were negative on gastrointestinal radiologic studies and the patient no longer voiced these complaints to his doctor.

The physical examination revealed no abnormalities other than a huge fixed mass in the region of the prostate which felt like advanced cancer of the prostate.

The results of routine blood and urine studies were negative, the serum acid phosphatase was normal, and a roentgenogram of the chest was negative. An intravenous pyelogram showed a Grade I dilatation of

*Jack Glasgow, M.D.

Since graduating from Northwestern University School of Medicine in 1943, Donald D. Albers, M.D., has been certified by the American Board of Urology. In addition to his private practice in Oklahoma City, he is Assistant Professor of Urology at the University of Oklahoma School of Medicine.

Doctor Albers is a member of the American Urological Association, the American College of Surgeons and is President of the Oklahoma Urological Association.

Philip L. Stephenson, M.D., graduated from the University of Oklahoma School of Medicine in 1958 where he is now taking a residency in General Surgery.

the renal pelvis, calyces and ureter on the right side, but the left side appeared normal. A shadow in the region of the lower end of the right ureter was thought to be a ureteral calculus, but cystoscopy and retrograde studies under pentothal anesthesia proved it to be a phlebolith. There was no evidence of a tumor in the bladder or in the prostatic urethra although the prostatic urethra was very rigid, compatible with cancer of the prostate.

Biopsies of the prostatic urethra made with a resectoscope were negative for malignancy. Under the same anesthetic perineal biopsies were attempted with a Silverman needle but nothing but fat droplets could be withdrawn from the huge mass. A few days later deep wedge biopsies were made of this mass by perineal exposure of the prostate. Only about one cm. of the apex of the prostate appeared normal. There was very little bleeding, which seemed unusual for this type exposure.

The pathologists' report* was infiltrating carcinoma. The patient was placed on Stilbesterol and dismissed from the hospital at his insistence three days after this procedure. He returned to his job as a barber a few days later.

Five weeks later he developed ascites and pedal edema. He entered the Veterans Hospital where he was studied thoroughly by the urologic and later the medical departments. Examination of the ascitic fluid showed signet cells which were thought to be definitely of malignant origin. Films of the stomach revealed linitus plastica. The patient was given supportive treatment but his course was steadily downhill and he died on October 7, 1960. The autopsy confirmed the radiologic diagnosis of linitus plastica of the stomach; generalized carcinomatosis and a frozen pelvis were also found.

*Doctors Floyd Keller and Henry Russell

COMMENT

Extensive anatomic and embryologic studies have been reported on the caudal peritoneal fold, or cul-de-sac, and Denonvilliers' fascia which separates the prostate and the rectum.[4] According to these studies, the anterior layer of Denonvilliers' fascia is thought to be formed by a fusion of the two layers of peritoneum below the cul-de-sac, which ends above the prostate in adults. In view of the rarity of the situation presented in this case, one might assume that either the caudal peritoneal fold was unusually deep or an anomaly of the lymphatic channels allowed the tumor cells to migrate to the prostate.

SUMMARY

This is a report of a 40-year-old white man who had silent carcinoma of the stomach with the first clinical signs produced by metastasis to the prostate. His course was rapidly downhill and he died only three months after the initial diagnosis of malignancy was made by a perineal biopsy. The diagnosis was ultimately confirmed by roentgenograms of the stomach, cytologic study of the ascitic fluid and later, autopsy findings. From a review of the literature it appears that this is only the third such case to be reported. □

REFERENCES

1. Extrarectal tumors caused by silent carcinomas of the stomach and pancreas. J. O. Salik, J.A.M.A. 175: 457-463, 1961.
2. Unusual carcinomas involving the prostate gland. G. J. Thompson, D. D. Albers, and A. C. Broders, J. Urol. 69: 416-423, 1953.
3. Gastric carcinoma. Histology and biologic behavior. R. M. Mulligan and R. R. Rember, A.M.A. Archives of Pathology, 58: 1-25, 1954.
4. Anatomical and surgical restudy of Denonvilliers' fascia. C. E. Tobin and J. A. Benjamin, S.G.&O. 80: 373-388, 1945.

Donald D. Albers, M.D.,
301 N.W. 12th, Oklahoma City, Oklahoma

Fluid and Electrolyte Balance Clinical Case Analysis

LESTER I. NIENHUIS, M.D., F.A.C.S.

Internal fluids shifts frequently occur in disease and trauma. These fluid losses are at the expense of the intracellular and extracellular fluid spaces; "Shock" and oliguria may ensue.

HISTORY

A FORTY-ONE-YEAR-OLD white female was admitted to St. John's Hospital in Tulsa, Oklahoma with a history of severe abdominal crampy pain associated with nausea and vomiting for the past 16 hours. She had noticed progressive distension of the abdomen with inability to pass stool or flatus.

Past history revealed peritoneal insults on several previous occasions. A perforated appendix was associated with generalized peritonitis in 1936. An appendectomy was carried out at this time. In 1941 she had a ruptured tubal pregnancy with hemoperitoneum. This was treated by a right salpingo-oophorectomy and several blood transfusions. A hysterectomy for leiomyomatous uterus was carried out in 1950. This was complicated by a postoperative evisceration with subsequent repair.

PHYSICAL EXAMINATION

Admission blood pressure was 120/80mm. mercury. The pulse rate was 90 per minute, and the temperature was 98.8 degrees. Slight dehydration was evidenced by thirst, slightly dry mucous membranes and a mild decrease in tissue turgor. General physical examination was essentially negative except for moderate abdominal distension with gas. Bowel sounds were hyperactive and of high-pitched variety. Multiple borborygmi were present. There was slight generalized abdominal tenderness without rigidity or rebound tenderness. Shifting dullness could not be elicited. There were no palpable abdominal masses, organs or herniae.

LABORATORY

The admission hemoglobin was 14 grams with a white blood cell count of 11,200. There were 76 per cent polymorphonuclear neutrophiles. The hematocrit was 38 per cent, and the serology was negative. Detailed urinalysis was negative. The specific gravity was 1.022, and the reaction was acid. Scout films of the abdomen revealed progressive distension of small bowel secondary to simple mechanical obstruction. A Miller-Abbott tube was noted in the proximal jejunum.

COURSE IN THE HOSPITAL

During the first three days of her hospitalization, Miller-Abbott tube suction was continued with progression of the tube into the jejunum. The abdominal distension diminished somewhat, but the patient did not pass flatus. Two thousand milliliters of intravenous fluids were given daily. This included 1000 milliliters of five per cent glucose in saline and 1000 milliliters of five per cent glucose in distilled water. On the fourth hospital day the patient was operated upon with the finding of masses of adhesions involving the entire small bowel. The obstructive adhesions were located primarily in the left upper quadrant and the mid-abdomen. These adhesions were divided by sharp dissection. The surgeon stated that he entered several loops of dilated small bowel during this dissection. Immediate repair of these

rents was accomplished by the usual inversion technique of suture. The peritoneal cavity was irrigated with saline, and the wound was closed without drainage using multiple interrupted number 31 stainless steel wire sutures to close the peritoneum and fascia in one layer. No bowel was resected. At the conclusion of the operation the patient demonstrated moderate pallor, collapsed veins, rapid thready pulse and a blood pressure which varied from 70 to 90 mm. mercury systolic over 40 to 50 diastolic.

During the first 33 hours after operation, the patient remained in shock with blood pressures varying from 0 over 0 to a high of 80 over 40 mm. mercury in spite of 2000 milliliters of whole blood and 2000 milliliters of five per cent glucose in distilled water given by the intravenous route. She remained somewhat disoriented, and moderate abdominal distension with absent bowel sounds remained. Thirty-three hours postoperatively consultation was obtained at which time the blood pressure was 70 over 0 mm. mercury; the pulse was imperceptible. The patient was irrational and had cold clammy extremities. Marked generalized pallor existed. Examination of the abdomen revealed moderate distension associated with rigidity and rebound tenderness in all quadrants. No bowel sounds were present. All peripheral veins were collapsed, and tissue turgor was decreased. The urine output for the first 33 postoperative hours was 85 milliliters. Emergency laboratory studies at this time were: hematocrit 60 per cent, hemoglobin 18 grams, chlorides 93 mEq/L., CO2 31 mEq/L., potassium 3.5 mEq/L. and sodium 130 mEq/L.

SOLUTION

At the time of consultation, a five per cent glucose in water solution containing two ampules of levophed was being infused intravenously in an attempt to maintain blood pressure. In spite of rather massive blood transfusions (2000 milliliters) and levophed drip her blood pressure was only 70 over 0 mm. mercury. Her pulse was imperceptible, and the patient was in obvious deep shock with all of the typical manifestations previously described. Because of the operative findings and the rapidly rising hematocrit, it was apparent that the patient had a large third space loss of extracellular fluids producing internal dehydration. Typical surgical shock was the result of marked loss of plasma volume into the dilated loops of small bowel and the peritoneal cavity.

A right saphenous vein cutdown was done at the ankle with insertion of a polyethylene catheter. The glucose solution containing levophed was discontinued. The first solution infused consisted of 300 milliliters of three per cent sodium chloride given intravenously over a period of 60 minutes. It was felt that the 2000 milliliters of blood already given was sufficient to replace protein losses into the gut and peritoneal cavity. The hypertonic sodium chloride solution increased the osmolarity of the intravascular fluids resulting in an expansion of this compartment. The result was dramatic. Her blood pressure promptly rose to 130 over 80 mm. mercury associated with a 120 per minute pulse rate. At the end of two hours, blood pressure and pulse rate stabilized at these values. (The volume of the extracellular fluid is dependent upon the concentration of the sodium ion in this space. By increasing the sodium ion concentration, expansion of the extracellular fluid space can be obtained. This occurs at the expense of the intracellular fluid space.)

During the next 12 hour period, 3000 milliliters of Ringers lactate and 1000 milliliters of ten per cent Travert in distilled water were given. The large volume of Ringers lactate was deemed necessary to replace the electrolyte loss into the gut and peritoneal

---

Lester I. Nienhuis, M.D., graduated from the University of Michigan Medical School in 1946. He is certified by the American Board of Surgery. In addition to his private practice, he is a member of the teaching staff of St. John's Hospital and Hillcrest Medical Center in Tulsa.

Doctor Nienhuis is a member of the American College of Surgeons, the Southwestern Surgical Congress, the Frederick A. Collier Surgical Society and the Association of Military Surgeons.

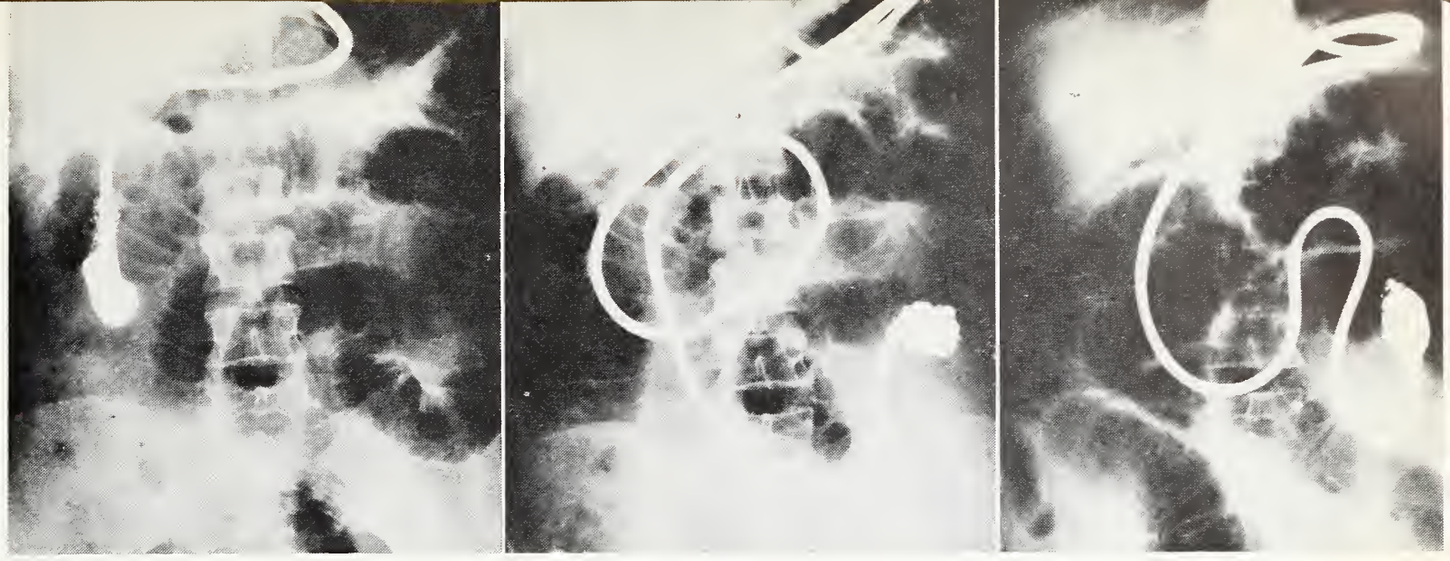


Figure 1. A, B, and C. Scout films of the abdomen on three successive preoperative days showing small bowel obstruction which did not respond to conservative treatment.

cavity. After 13 hours of definitive therapy, electrolyte studies were as follows: Blood urea nitrogen 28 milligrams per cent, CO2 28 mEq/L., chlorides 101 mEq/L., sodium 134 mEq/L., potassium 4.5 mEq/L. and hematocrit 54 per cent. Blood pressure, pulse and respirations remained stable, and the patient was completely oriented. The total urine output during this 13 hour period was 770 milliliters compared to 85 milliliters in the 33 hour period before treatment with hypertonic saline. With further hydration the hematocrit and blood urea nitrogen returned to normal levels. Resolution of the third space effect heralded by a marked diuresis occurred four days later when the peritonitis was controlled.

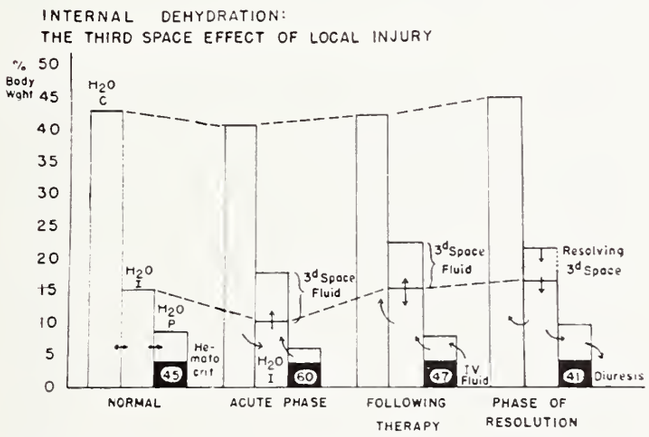


Figure 2. The third space effect of burns, trauma or infection resulting in dehydration of the intracellular and extracellular fluid spaces. This is sequestrated fluid which is not available to the patient until the wound edema or infection subsides. Replacement therapy is necessary to restore normal volumes of intracellular and extracellular fluids. H2O C is cell water; H2O I, interstitial fluid; and H2O P, plama water. (From Randall, H. T.: Water and Electrolyte Balance in Surgery. S. Cl. No. America, 32: 445, 1952, courtesy W. B. Saunders Co.)

Internal fluid shifts such as this are usually the result of infection, trauma or burns. A rapidly rising hematocrit is its trademark. Generalized peritonitis results in fluid and electrolyte losses approaching the magnitude of a 20 per cent body burn. Thus severe depletion of both the extracellular and intracellular compartments occurs to satisfy the demands of the third space. Upon resolution of this third space effect, an autoinfusion of water and extracellular electrolytes occurs. Some patients may have difficulty disposing of this now overexpanded total extracellular fluid space. Intake at this point must be markedly curtailed in both fluids and electrolytes. During the acute phase rather large quantities of fluids and electrolytes are necessary to at least partially replace these substances which are lost in the area of injury or infection. When replacement does not occur, the marked contraction of the plasma volume results in the shock state depicted in this case. □

SUGGESTED READING

1. Danowski, T. S., Winkler, A. W., and Elkinton, J. R.: The Treatment of Shock Due to Salt Depletion; Comparison of the Hemodynamic Effects of Isotonic Saline, of Hypertonic Saline, and of Isotonic Glucose Solutions. J. of Clin. Investigation, 25: 130, 1946.
2. Elkinton, J. R., Danowski, T. S., and Winkler, A. W.: Hemodynamic Changes in Salt Depletion and in Dehydration. J. of Clin. Investigation, 25: 120, 1946.
3. Elkinton, J. R., Winkler, A. W., and Danowski, T. S.: The Importance of Volume and Tonicity of Body Fluids in Electrolyte Shock. J. of Clin. Investigation, 26: 1002, 1947.
4. Hardy, J. D.: Fluid Therapy. Philadelphia, Pa., Lea and Febiger, 1954.
5. Marriott, H. L.: Water and Salt Depletion. Springfield, Ill., Charles C. Thomas, 1950.
6. Randall, H. T.: Water and Electrolyte Balance in Surgery. S. Clin. No. America, 32: 445, April, 1952.
7. Randall, H. T., Preoperative and Postoperative Care With Consideration of Fluid and Electrolyte Balance in the Surgical Patient. Chapter I in Madden, J. L.: Atlas of Techniques in Surgery, New York, Appleton-Century-Crofts, 1958.
8. Schroeder, H. A.: Renal Failure Associated With Low Extracellular Sodium Chloride; the Low Salt Syndrome. J.A.M.A., 141: 117, 1949.

Utica Square Medical Center, Tulsa, Oklahoma

Allergic Reactions to Low Environmental Temperature

"Cold Allergy"

LEON HOROWITZ, M.D.

Chronic urticaria is a problem most physicians are happy to see someone else handle. Here is a case of one type of urticaria that can be easily diagnosed and perhaps even helped.

A CENTURY has passed since the first case of probable physical allergy due to cold was reported.[1] In these 100 years many instances of reactions to cold[2, 3, 4] and other physical modalities have been described,[5, 6, 7] but the basic mechanism of physical allergy is still poorly understood.[8]

Since the pathologic physiology involved has not been elucidated, the differentiation between allergic and nonallergic reactions to physical agents is not always easily made. The fulfillment of various criteria for an allergic reaction[9] might fit many circumstances, but the reproductability of symptoms, under controlled exposure, in the laboratory, tends to separate the true hypersensitivity reaction from that implicated by circumstantial evidence. That is, the observation of urticaria after immersion of an extremity in ice water, is more impressive evidence for physical allergy than the description by a patient of an "itchy rash after going out in a cold wind" on the day that a shrimp dinner was had and aspirin was taken for headache.

An attempt was made, in this study, to define the mechanism of cold urticaria.

CASE REPORT

D.H., a nine-year-old white male, first had difficulty with his skin at six weeks of age. At that time, after operation for torsion of the testicle, he developed a diffuse maculopapular erythematous rash due to unknown cause. Since then he has become sensitive to contact with nylon. He develops very large, pruritic, indurated areas when bitten by mosquitoes. For several years, in early childhood, he had frequent "colds" with earaches.

For six months, prior to being seen, he had been having diffuse, intermittent urticaria. This occurred spontaneously, lasting minutes to hours, and subsided without specific treatment. No cause was apparent. There was no evidence of emotional distress.

Family history revealed that his mother has "chronic sinus" and his maternal grandmother had hives with no known cause. Various dietary restrictions had been attempted without improvement.

Skin tests, both puncture and intradermal, to several pollens and environmental inhalants and to cereal grains, eggs, milk, and chocolate, revealed no reactions. Intradermal testing to stinging insects and mosquito showed reaction to mosquito at 1: 100,000 dilution, weight by volume.

Further observation, and discussion with the mother, revealed that the patient de-

Because of the history suggesting a physical allergy to cold temperatures, various procedures were carried out to confirm or eliminate this possibility and to elucidate possible mechanisms.

METHOD

Immersion of the patient's right forearm in ice water, 11° C., produced initial blanching, followed by a flush. The arm was submerged for five minutes, and then 12 minutes later, urticaria began to appear. This developed into numerous, three to seven mm., hives occuring both in the area that had been submerged and on the arm above (figure 1). This was repeated on several occasions with the same results.

In an attempt to elucidate the urticariogenic factor, passive transfer tests were performed. Serum obtained from the subject before his arm was chilled, was divided into two fractions; one was maintained at body temperature (specimen I), the other refrigerated at 7° C., (specimen II). Another sample was obtained immediately after the induction of cold urticaria (specimen III), and it was refrigerated. Serum was obtained from a non-allergic donor under the same conditions, for control (specimen I′, II′, III′). Serological tests for syphilis and the test for cryoglobulins were negative on all samples. Filter-paper electrophoresis revealed a normal pattern in each specimen.

Passive transfer was performed using two non-allergic recipients. Each received intracutaneous injections of 0.1cc of specimens I, II, III, I′, II′, and III′. A wheal appeared almost immediately after injection of each of the serum samples. This was much more marked at the site of injection of the patient's serum (I, II, III) than at the control sites (I′, II′, III′). The wheals produced by the controls subsided in 20 minutes. Those produced by the subject's serum lasted 60 minutes.

Two hours after the injection, when no wheals were present, both recipients' arms were submerged in ice water at 11° C. for five minutes. Urticaria developed at sites I, II, and III only. The wheals were somewhat larger at sites II and III than at I.

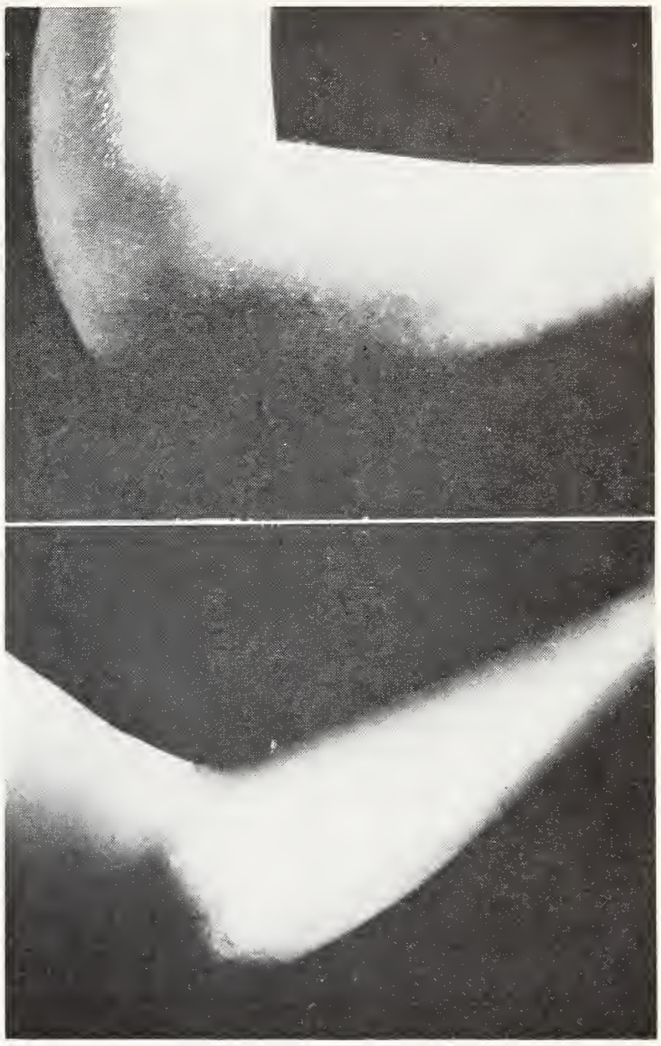


Figure I

DISCUSSION

There are three conditions in which exposure to cold may cause urticaria: cryoglobulinemia, paroxysmal cold hemoglobinuria (syphilitic), and essential cold urticaria.[4]

CRYOGLOBULINEMIA

In cryoglobulinemia, though cold urticaria is not the most common symptom, it frequently occurs first. The most common manifestation is purpura, but Raynaud's phenomenon and oral, nasal, conjunctival, and retinal bleeding are reported.[10, 11] When the serum of the patient with cryoglobulinemia is cooled, a precipitate forms which redissolves on warming. The temperature to which it need be cooled to produce such changes depends on the concentration of the abnormal globulin. In high concentration it may precipitate at room temperature. The cryoglobulins are

veloped hives after lying on a wool carpet while watching television and after swimming in cold water or taking a cold shower. found in the gamma fraction and may be due to an abnormal mechanism of protein synthesis.

These abnormal proteins are found in many disease states, (kala azar, subacute bacterial endocarditis, multiple myeloma, chronic leukemia, rheumatoid arthritis, etc.), but cases do occur with no other known disease; so called, "essential cryoglobulenemia." The mechanism for the production of the cutaneous symptoms is not known. Whether the cryoglobulins are responsible for the symptoms of the disease or whether it is one of many findings is still to be elucidated. Electrophoresis of cryoglobulinemic serum reveals a "T" component migrating between the beta and gamma globulins.[12]

PAROXYSMAL COLD HEMOGLOBINURIA

This condition is due to an auto-cold hemolysin present in the blood of syphilitics. It attaches to the red cells at low blood temperatures (fixing complement) and causes hemolysis when the blood is warmed. These individuals typically develop hemoglobinuria following an abrupt change from a cold to a warm environment. Hemoglobinuria occurs only if the renal threshold for hemoglobulin is exceeded. This is not an uncommon symptom in luetics and frequently occurs in stages of the disease when there is no other clinical evidence of the basic disorder.[13] It disappears completely with adequate antiluetic treatment. Urticaria frequently occurs with cold hemoglobinuria but it may precede or follow it.[14] It has been suggested that the urticarial factor and the hemolysin are separate entities. It has been established that the factors responsible for urticaria and the positive Wasserman test are different.[15]

COLD ALLERGY

Essential cold urticaria (cold allergy) occurring separately from the above diseases, is the most common form of urticaria associated with low environmental temperature. A congenital, familial type occurs in which the condition is present from shortly after birth and is present throughout life.[16] It is transmitted as a non-sex-linked Mendelian dominant. Constitutional symptoms may be associated with whealing. A more common form is acquired and idiopathic. Many cases have been reported where the onset was concurrent with, and seemed to be due to, a contagious or infectious disease or other unusual occurrence.[17, 18] These may be more apparent than real. Many other cases occur with no apparent cause. The urticaria is usually localized to the area of exposure, though in more severe cases urticaria may occur at other than the exposure site. Mucous membranes may show similar reactions, and some cases of apparent asthma after exposure to cold air may actually be due to swollen bronchial mucosa in urticarial response to the cold. Acute laryngeal edema has been noted.[19] Gastrointestinal symptoms may also occur. Some individuals with greater sensitivity may have constitutional symptoms with tachycardia, hypotension and syncope. Indeed, it has been suggested[20, 21] that cases of drowning of unknown cause may be due to such reactions.

The mechanism of whealing in cold urticaria is not fully understood. The wheals appear to be typical of those mediated by histamine as outlined in Lewis' work on H-

---

Leon Horowitz, M.D., graduated from New York University Bellevue Medical Center in 1952. He practiced general pediatrics in Tulsa from 1955 to 1958 and, after further residency, has limited his practice to pediatric allergy since 1959. He is Visiting Lecturer in Pediatrics at the University of Oklahoma School of Medicine.

Doctor Horowitz is a diplomate of The American Board of Pediatrics and eligible for certification in Pediatric Allergy. He is a Fellow of The American Academy of Pediatrics and a member of The American Academy of Allergy, The American College of Allergists, The International Correspondence Society of Allergists and The Southwest Allergy Forum.

He has been chairman of the Pediatric Section and Coordinator of Pediatric Education at Hillcrest Medical Center in Tulsa.

substance. This is supported by the fact that antihistamines relieve many of these patients[22] and by Horton's and associates work on histamine shock in cold allergy.[20] The enigma is, how does cold act to liberate histamine. Some believe that direct tissue trauma causes the histamine release; others think that it causes the release in the skin of a substance which acts as an antigen.[4] This antigen, which has previously stimulated antibody production, combines with the specific antibody and then histamine is released. It is postulated,[23] that this metabolite (antigen) is released normally in human skin exposed to physical agents and that only certain individuals react to it with antibody production. Experiments have been performed, particularly passive transfer, in an attempt to elucidate the responsible factor. The results have been variable. In a review of the literature from 1929 to 1955,[4] 30 of 54 attempts (56 per cent) at passive transfer were successful. No other passive transfer experiments have been reported to date. In another approach, an extract of frozen human skin was mixed with the serum of the cold-sensitive patient and injected into a recipient with no effect.[24]

In our case, the subject's serum had an immediate urticariogenic effect unrelated to cold exposure in the subject or the recipient. This was also noted, to much lesser degree, in the control serum. The fact that after exposure to cold, whealing occurred in the recipient's arm only at the site of injection of the patient's serum, suggests the presence of a specific "cold-sensitive" urticariogenic factor. The observation that this factor was present in the blood taken from the subject before cold urticaria was produced, and the further observation that this factor was enhanced by chilling (refrigeration of specimen II, cold exposure before collecting specimen III) would suggest that we are dealing with a serum factor rather than a skin metabolite. However, another interpretation could be made. Baer[8] thinks that "a (skin) metabolite is normally formed by all individuals (on exposure to cold), but that those who react with urticaria have formed an allergic reaction to the metabolite." Therefore, in the tests described, one could suggest that the wheal in the recipient was due to an antibody in the donor's serum combining with an antigen (metabolite) in the recipient's skin. This problem might be further clarified by obtaining serum from an individual not sensitive to cold, before and after cold exposure, and injecting this into the individual with cold urticaria. If whealing developed only in the post exposure specimen one would have further support of Baer's theory.

TREATMENT

The treatment of cold allergy falls into two categories: "desensitization" and specific drug therapy. Histamine desensitization has been reported as being beneficial,[25] but as Griem and Rothman state,[4] it is "difficult to accept the premise that the human body can be desensitized to one of its physiological products." Cold desensitization has also been recommended.[21,26] In this procedure, the hands, or arms, or the entire body is immersed in water starting at a temperature which will not cause reaction. The exposure is for five minutes, one to three times a day. This is done daily and the temperature is gradually reduced to 7° to 10° C. When improvement has been reported, its duration was variable.

Antihistamines have been reported to be of value in the relief of symptoms in some patients[21,22] but not in others.[27] In the case herein reported, hydroxyzine hydrochloride (Atarax*), given in a dose of 10 mg., 30 minutes before bathing in cold water, prevented the urticaria. ACTH and cortisone have been used without success.[28]

SUMMARY

1. A case of cold urticaria and the results of studies of the causative mechanism are presented.

2. The conditions in which cold urticaria occurs: cryoglobulinemia, paroxysmal cold hemoglobinuria, and essential cold urticaria —are reviewed.

3. The mechanism of whealing in cold urticaria is discussed with particular reference to passive transfer.

4. Hydroxyzine hydrochloride prevented urticaria from developing when the patient

*J. B. Roerig

was exposed to cold environmental temperature.

The author wishes to express his thanks to Harris D. Riley, Jr., M.D., Professor and Head of the Department of Pediatrics, University of Oklahoma School of Medicine, for his efforts in reading this paper and offering correction and constructive criticism. □

BIBLIOGRAPHY

1. Harkavy, J.: Physical Allergy, in Cooke, R. A.: Allergy in Theory and Practice, Philadelphia, Saunders, 1949, p. 480.
2. Bray, G. W.: A Case of Physical Allergy. A Localized and Generalized Type of Allergic Reaction to Cold, J. Allergy, 3: 367, 1932.
3. Kelly, F. J. and Wise, H. A.: Observations on Cold Sensitivity, Am. J. Med., 15: 431, 1953.
4. Griem, S. F. and Rothman, S. R.: Cutaneous Sensitivity to Cold, Am. Pract. and Digest of Treat., 7: 1335, 1956.
5. Rinkel, H. J.: Thermal Allergy. Clinical Evaluation and Management, South, M. J., 44: 1067, 1951.
6. Duke, W. W.: Urticaria Caused by Light, J.A.M.A., 80: 1835, 1923.
7. Lorincz, A. L.: Hypersensitivity to Trauma, Am. Pract. and Digest of Treat., 7: 1314, 1956.
8. Baer, R. L.: The Present Status of Differentiation of Allergic and Nonallergic Hypersensitivity to Physical Agents, ibid, p. 1311.
9. Harris, M. D. and Shure, N.: Practical Allergy, Philadelphia, F. A. Davis Co., 1957, p. 10.
10. Steinhardt, M. J. and Fisher, G. S.: Cold Urticaria and Pupura As Aspects of Cryoglobulinemia, J. Allergy, 24: 355, 1953.
11. Rovik, K.: Cryoglobulinemia; Survey and Case Report, Acta Med. Scandinav., 137: 390, 1950.
12. Wertschaffer, Z. T., Williams, D. W., and Gaulden, E. C.: Cryoproteinemia: An Immunologic Phenomenon?, Am. J. Med., 20: 624, 1956.
13. Becker, R. M.: Paroxysmal Cold Hemoglobinurias, Arch. Int. Med., 81: 630, 1948.
14. Harris, K. E., Lewis, T., and Vaughan, J. M.: Hemoglobinuria and Urticaria From Cold Occurring Singly or In Combination, Heart, 14: 305, 1929.
15. MacKenzie, G. M. Paroxysmal Hemoglobinuria; a Review, Medicine, 8: 69, 1929.
16. Witherspoon, F. G., White, C. B., Bazemore, J. M., and Hailey, H.: Familial Urticaria Due to Cold, Arch. Dermat. & Syph., 58: 52, 1948.
17. Kobacker, J. L., and Parkhurst, H. J.: Cold Urticaria Following Measles in Three Sisters, J.A.M.A., 105: 662, 1935.
18. Fitzmaurice, B. T.: Cold Urticaria Following Chickenpox; Report of a Case, Northwest. Med., 34: 443, 1935.
19. Riley, H. D., Jr., Personal communication.
20. Horton, B. T., Brown, G. E., and Roth, C. M.: Hypersensitiveness to Cold With Local and Systemic Manifestations of a Histamine-Like Character: Its Amenability to Treatment, J.A.M.A., 107: 1263, 1936.
21. Blackman, N. S.: Hypersensitivity to Cold, N. Y. State J. Med., 59: 2614, 1959.
22. Rothchild, J. E.: Effects of Benadryl on Systemic Manifestations of Cold Hypersensitivity, J. Allergy, 20: 62, 1949.
23. Sulzberger, M. B., and Baer, R. L.: Studies in Hypersensitivity to Light: II Urticaria Solare, J. Invest. Dermat., 7: 99, 1946.
24. Sherman, W. B., and Seebohm, P. M.: Passive Transfer of Cold Urticaria, J. Allergy, 21: 414, 1950.
25. Saylor, L. L., and Wright, I. S.: Studies on Two Cases of Urticaria From Cold Sensitivity and of the Effect of Histamine Treatment, Am. J. M. Sc., 192: 388, 1936.
26. Kierland, R. R.: Physical Allergies, AMA Arch. Dermat. & Syph., 68: 61, 1953.
27. Goldberg, E. E., and Dobson, R. P.: Cold Sensitivity Syndrome, Ann. Int. Med., 20: 505, 1959.
28. Kelly, F. J., and Wise, R. A.: Observations on Cold Sensitivity, Am. J. Med., 15: 431, 1953.

4926 East 21st, Tulsa, Oklahoma

Rx All OSMA Members

You look a little peeked. Need a break! Come to your '62 Annual Meeting.

What's in it for you? Everything. Big time vesting firemen and local hotshots & superlative scientific savvy; a dose of ol' fashioned Americanism; invigorating discussions of Tax and legal problems, investment angles; exercise and nourishment at The Inaugural Ball; and other beneficial side effects, like no telephone around.

It's at the Skirvin Hotel, May 5-7.

See you There — Plenty good medicine!

*Fiber Optics**

VIRGIL RAY FORESTER, M.D.

A new gastroscope which makes gastroscopy a valuable procedure.

THE SCHINDLER flexible gastroscope has for many years filled a definite place in endoscopic studies of the gastric mucosa. However, there was much to be desired from the instrument. Though this conventional gastroscope was semi-flexible, sufficiently so that it could pass through the esophagus without producing damage, many so-called blind spots were produced by its lack of complete flexibility. After passage through the esophagus and into the stomach, the scope assumed a straight line. This position caused it to hug the posterior wall of the stomach and a blind spot was produced. Because of anatomical positioning of the stomach, the antrum was out of view to the scope's right angle optical system. The pylorus, which is a vital area in such a study, was frequently not visualized. Finally, the duodenum was completely inaccessible to the examiner. Because of these inadequacies the value of a gastroscopic examination was often questioned, and justly so.

With the introduction of the Hirschowitz Gastroduodenal Fiber Scope, these handicaps for the most part, have been eliminated (figure 1). This instrument utilizes a new and revolutionary system of fiber optics which permits transmission of images through multiple optical glass fibers. It is completely flexible throughout its entire length, making it possible to examine the full length of the stomach and duodenum. Bending of the instrument, even in the form of a "U" does not destroy, alter, or distort the image.

Where, with the conventional gastroscope, the examination period was of necessity limited to a few minutes, the period of time with the Fiber Scope is limited only by what is required for a complete and thorough examination. Since the instrument can be passed with comparatively little or no discomfort to the patient, it becomes a valuable adjunct to both diagnostic and therapeutic procedures. Nothing is more valuable than the ability to observe the area under question or treatment (figure 2).

Evaluation of the post-gastrectomy stump by x-ray is difficult. This was obvious in the case of Mr. X, who had undergone a partial gastrectomy for peptic ulcer. He did

Virgil Ray Forester, M.D., graduated from the University of Oklahoma School of Medicine in 1944 where he is now Assistant Professor of Medicine. His practice is limited to his specialty, gastroenterology.

Doctor Forester is a member of the Bockus Alumni International Society of Gastroenterology, the Oklahoma Clinical Society and the Oklahoma Society of Internal Medicine.

*From Saint Anthony Hospital, Oklahoma City, Oklahoma

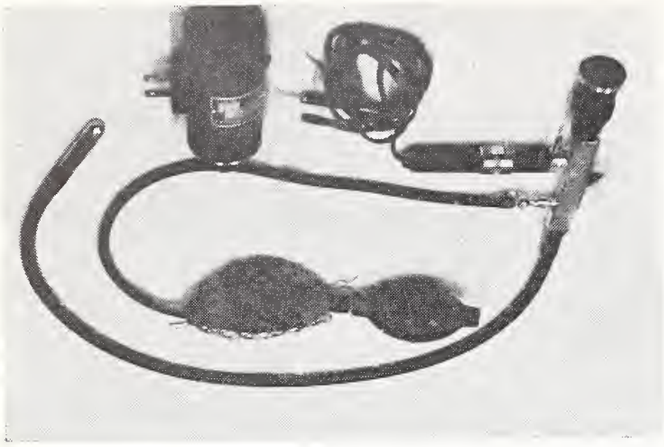


Figure 1. Hirschowitz gastroduodenal fiberscope with attachments.

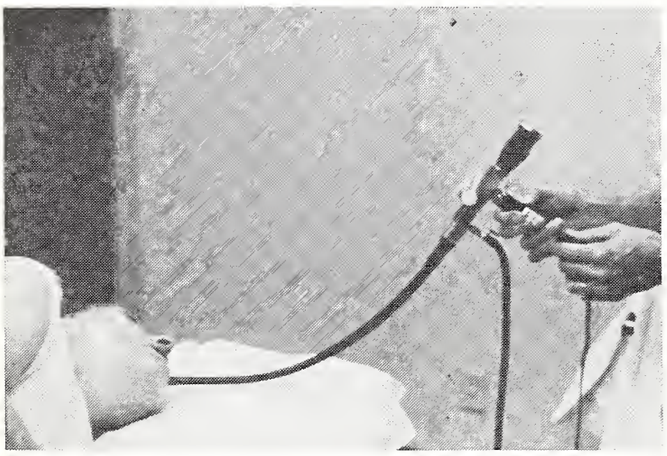


Figure 2. Gastroduodenal fiberscope inserted into stomach.

well for a month and then again developed epigastric pain which was more or less persistent. Repeated roentgenograms of the gastric stump failed to show evidence of pathology. At gastroscopy, the original stoma was found to have partially closed, leaving two very small openings. In one opening was a marginal ulcer, and between the two a very large ulcer was found (figures 3, 4 and 5).

Studies of the innermost aspects of the stomach and duodenum with this new instrument have made it possible to re-evaluate old ideas, and discover new ones. It has now been discovered that at the apex of the duodenum there is a sphincter-like mechanism similar to that of the pylorus. This is now termed the "Duodenal Sphincter" (figure 6). Duodenal scarring as the results of peptic ulceration will affect the normal functioning of this sphincter. In such cases, the outlet of the duodenal cap may be quite constricted with a resultant ulcer-pain syndrome in the absence of ulceration. In such cases radiologic evaluation is of little value inasmuch as the barium will leave the stomach in an apparently normal manner.

This syndrome presented itself in a young woman who had had numerous recurrent ulcerations of the duodenum. At the time of the present illness, she was experiencing severe epigastric pain. Radiologic evaluation was reported as being negative for pathology of the stomach and duodenum. Other considerations such as gallbladder disease, coronary artery disease, and pancreatic disease were also negative. At gastroscopy, the duodenal sphincter was observed to be constricted; never opening larger than approximately four millimeters in diameter (figure 7).

At times, an ulcer may be quite small in size; so small that radiologic evaluation is equivocal. The following is such a case. This patient had experienced upper intestinal bleeding two years previously. In the interim she had experienced numerous bouts

Figure 3. Stoma.

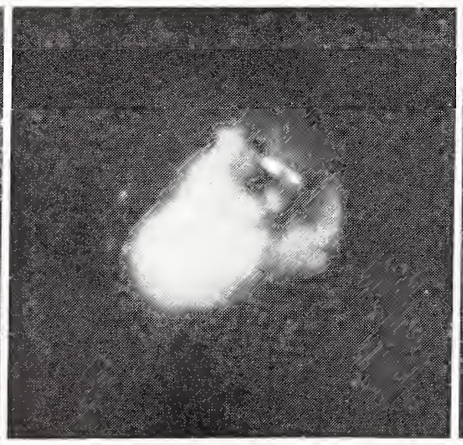


Figure 4. Large ulcer lying between figures 3 and 5.

Figure 5. Stoma with small marginal ulcer.

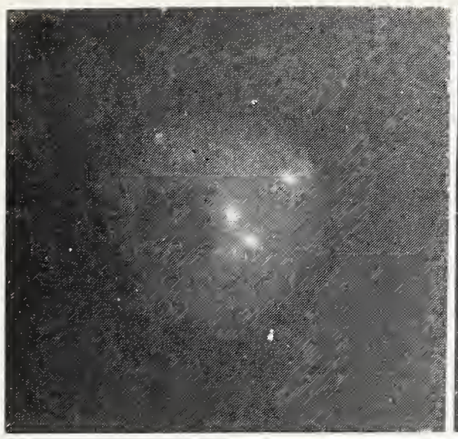


Figure 6. Duodenal sphincter.

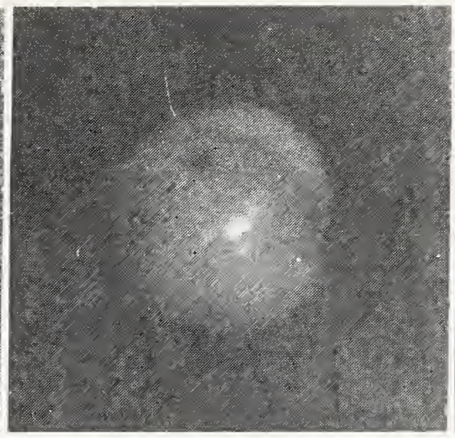


Figure 7. Constricted duodenal sphincter.

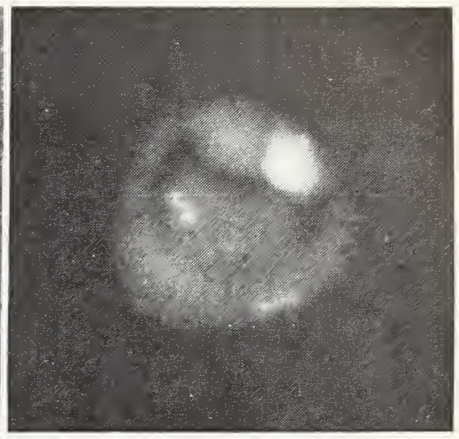


Figure 8. Partial gastrectomy stoma with obstructing flap of mucosa.

of epigastric discomfort and in the week before examination the pain was more severe. On radiologic examination of the stomach and duodenum a tiny fleck of barium was seen on the lesser curvature side of the duodenum. It was questionable from these studies whether there was or was not an ulcer present. At gastroscopy, a one millimeter ulcer was visualized with inflammation present in the surrounding mucosa.

An elderly female had undergone operation for peptic ulceration of the duodenum. After approximately two months of freedom from discomfort, she developed persistent nausea and vomiting shortly after eating. At gastroscopy, a large stoma was located which had a large flap of mucosa protruding from one side (figure 8). Theoretically, when the patient ate a meal, this flap would close off the stoma, producing a functional obstruction. At operation, the distal loop of the jejunum was found to be plastered to the anterior surface of the stomach, thereby producing the flap of the mucosa. Without the gastroscopic study the surgeon would have felt it necessary to open the stomach; as it was, the adhesions were released and the stomach allowed to unfold into a normal position.

SUMMARY

With the advent of the gastro-duodenal Fiber Scope, the gastroscopic study fulfills its desired requirements. The difficulties encountered with the conventional gastroscope have been removed. With this instrument, there is little or no discomfort to the patient. It is possible to study the gastric mucosa for a sufficient length of time for an adequate evaluation. The duodenum is within reach of the examiner. It has become a definite enhancement to both radiologic evaluation and definitive therapy of disease of the stomach and duodenum. □

Pasteur Building, Oklahoma City, Oklahoma

30,000 SAY 'NO' TO PRESIDENT KENNEDY

A petition bearing over 30,000 signatures against President Kennedy's proposed medical care plan for the aged was presented to Oklahoma's congressional delegation on Thursday, March 1, in Washington. Sponsored by the Oklahoma Chapter of the American Academy of General Practice, the petition read: "I, the undersigned, am opposed to government control of medicine in our free America. I favor free choice of my physician and voluntary insurance."

The names were collected over a two months period by 200 state family doctors who displayed petitions in their offices. The plan was aimed at all governmental controls of medicine.

Presenting the petition in Washington was C. Riley Strong, M.D., El Reno, chairman of the Public Relations Committee of the Oklahoma Chapter of the AAGP. Mrs. Charlotte Kinkaide, Nowata, medical assistant to L. C. Barnes, M.D., also made the trip to Washington as a reward for having secured the highest number of signatures.

Transistor Pacemaker for Complete Atrioventricular Dissociation*

NAZIH ZUHDI, M.D.
JOHN M. CAREY, M.D.
ALLEN E. GREER, M.D.

SHORT OR LONG term ventricular stimulation by means of an internally placed cardiac electrode has been used in patients with complete atrioventricular dissociation since February, 1958.

Complete atrioventricular dissociation may be congenital, the result of surgical repair of septal defects in certain locations, or a complication of arteriosclerosis, infarction, infection, drug administration and neurodegenerative disease (Refsum). It may be temporary or permanent.

The heart rate is usually below 45 a minute. The accompanying decreased cardiac output may lead to easy fatigability, mental sluggishness, convulsions, and death.

The pacemaker stimulus is delivered to the heart either through an electrode implanted in the myocardium of either ventricle or through an intravascular electrode introduced through a peripheral vein into the outflow tract of the right ventricle. Stimulation on a long time basis has not been entirely solved.

The insertion of the myocardial electrode requires a limited thoracotomy, and is used in cases of open heart surgery because the chest is already open. The percutaneous technique of wire insertion into the myocardium has been described, but is not widely used. The preferred route initially consists of the introduction under local anesthesia of an electrode through a peripheral vein, usually the right anterior jugular vein, into the outflow tract of the right ventricle. The indifferent electrode is placed in the subcutaneous tissue under either breast. The activating and indifferent electrodes are connected to the pacemaker which is externally or internally placed.

The pacemaker is small, and consists of a transistor, improved mercury cell batteries, and miniature components. The transistor adapts well to the low voltage, low resistance, and high current circuits necessary for artificial cardiac stimulation.

Patients with the intravascular electrode are anticoagulated. Prophylactic antibiotics may be used. Infections of significance are not usually encountered. Incapacitated patients have a much improved work capacity after placement of the transistor system.

Transistor pacemaking of the heart requires constant attention, and should be reserved for patients who do not respond to medical management.

*Mercy Hospital, Oklahoma City, Oklahoma.

NOTE

An Index-Handbook of Cardiovascular Agents, Vol. 2 (1951-55) is now available.

The handbook comprises more than 100,000 summaries of the action of cardiovascular agents, stated in one or more complete sentences, and arranged in alphabetical order. Special features include the standardization of chemical names, translation of titles of papers with identification as to original languages, and extensive cross-reference of standardized biological and medical subject headings.

Information regarding this can be obtained by writing the Oklahoma State Heart Association, 825 N.E. 13th Street, Oklahoma City 4, Oklahoma. □

Dean's Message

An institute for environmental research is being located in the Research Building of the University of Oklahoma School of Medicine with the aid of funds made available by industry. There is at present no similar facility in the area between Cincinnati and the west coast, and the support given by major industrial firms gives testimony to the need. It is hoped that this institute will have a favorable influence on occupational and public health in the Southwest. This beginning interest of industries in the capabilities of the Medical Center is important and greatly appreciated. Their contribution is the type of practical aid and help needed by schools of medicine to keep Medical Center gifts and grants balanced and diversified.

A teaching program will be conducted for physicians, and for medical, nursing, engineering and other students, who can make contributions to environmental control for health protection. Instruction will be made available to physicians, engineers, physicists and chemists in the fields of toxicology, air and water pollution and control of hazards, so that such knowledge may lead to the prevention of accidents and illness through improved design of equipment, procedures, processes and controls.

The institute also envisions opportunities for service to industry and to the public through toxicity evaluations of products and work environments, proper and effective labeling, and advice with reference to control measures where needed. Such service may well include consultant industrial hygiene surveys of plants or plant areas on request when unusual situations indicate some need for corrective action.

Another aim is to conduct research in the areas of air and water quality control, the relationship of exposure to toxic materials and chronic illness, and the impact of man's physical, biologic and social environment on health.

It can be seen from these objectives, and from the increasing hazards of a chemical and radiologic nature created by our advancing technology, that the formation of the Institute of Environmental Health is a very timely action.

Carl A. Nau, M.D., formerly chairman of the Department of Preventive Medicine and Public Health at the University of Texas Medical Branch, Galveston, is the director of the new institute. He is also a professor in our medical school's Department of Preventive Medicine and Public Health, under whose sponsorship the new institute was formed. □

Tuberculosis of the Liver

EDWARD N. BRANDT, JR., M.D.
PHILIP L. STEPHENSON, M.D.

A case report of hepatic tuberculosis with a review of the literature and concepts of diagnosis and management of this entity are presented and discussed.

TUBERCULOSIS of the liver has been thought to be rare; however, recent papers[1] have reported that in autopsied cases the liver was involved in 50 per cent to 80 per cent of cases of pulmonary tuberculosis and in 76 per cent to 100 per cent of cases of miliary tuberculosis. Early diagnosis is important, since adequate therapy generally results in dramatic and rapid improvement.[2,3] The purpose of this paper is to present a review of the literature of this entity in order to emphasize again its importance since no such discussion has appeared for several years. A report of a patient with hepatic tuberculosis complicated by fatty metamorphosis is included in order to better illustrate this problem.

CASE REPORT

The patient was a 72-year-old Choctaw Indian man who had undergone both a suprapubic and a transurethral prostatectomy for benign hyperplasia two years prior to admission. He was admitted to the Veterans Administration Hospital with a three-week history of urine escaping from scrotal and suprapubic fistulae. He had also noted occasional chills, fever, minimal abdominal bloating and fatty-food intolerance. He denied respiratory symptoms, jaundice and known exposure to tuberculosis, but he was known to be an alcoholic. Initial physical examination revealed a temperature of 97°, pulse of 108/min. and blood pressure of 144/80 mm. Hg. He was an obese, elderly-appearing Indian in no apparent distress. The sclerae were icteric, and there were bilateral cataracts. The A-P diameter of the chest was increased, with distant breath sounds but no rales or rhonchi. The abdomen was obese, soft and nontender. Liver, spleen and other masses were not palpable. Suprapubic and scrotal urinary fistulae were present. Tests were atrophic. The remainder of the examination was unremarkable. Laboratory data on admission included hemoglobin 13.8 gm. per cent, hematocrit 44 per cent and white cell count of 4,000 with 68 per cent neutrophiles. Urinalysis revealed 4+ protein, the presence of bile, five to six granular casts, 15 to 20 red blood cells and innumerable white blood cells per high-power field. Stool was gray and positive for occult blood. Blood-urea-nitrogen was 53 mg. per cent. Liver function studies included a serum cholesterol of 282 mg. per cent, total serum bilirubin of 10.4 mg. per cent with a direct fraction of 7.0 mg. per cent, total serum protein of 6.5 gm. per cent with an albumin of 2.5 gm. per cent and globulin of 4.0 gm. per cent, serum alkaline phosphatase of 24.0 Bodansky units, 4+ cephalin flocculation, and a prothrombin time of 19 seconds compared to a control of 14 seconds. Serology and serum acid phosphatase were normal, and urine urobilinogen was 0.08 Ehrlich units/100 ml. Two days later, the S.G.O.T. was 90 and S.G.P.T. 40 S.F. units. Six days after admission, serum cholesterol was 246 mg. per cent with 40 mg. per cent esters, S.G.O.T. 170 S.F. units, S.G.P.T. 20 S.F.

units, serum alkaline phosphatase 22.3 Bodansky units, total serum bilirubin 21.6 mg. per cent with a direct fraction of 14.8 mg. per cent and prothrombin time 24 seconds. E.C.G. indicated old anteroseptal and inferoseptal myocardial infarctions.

Following admission, the patient rapidly became more jaundiced, and four days later his temperature rose suddenly to 100.6° and he complained of mild mid-epigastric pain. The fever continued and he developed abdominal distension which was partially relieved by nasogastric suction. On the sixth hospital day, he became unresponsive, developed irregular respirations, and died.

The autopsy revealed miliary tuberculosis involving the lungs, lymph nodes, spleen, prostate, bone marrow, kidneys, gall bladder, adrenals and liver. Grossly, the liver was enlarged, weighing 2400 gms. It had a tawny cast with a fatty appearance and no tubercles were seen grossly. Microscopic examination revealed numerous scattered tubercles but no acid fast organisms were seen. There was moderate fatty metamorphosis with scattered areas of necrosis and marked bile stasis. Periportal fibrosis consistent with early cirrhosis was also found. The common bile duct was patent, but the gall bladder did reveal several small calculi. In addition, myocardial fibrosis and scarring, with an area of acute infarction, and coronary atherosclerosis was noted.

DISCUSSION

Hepatic tuberculosis is a very difficult diagnosis to establish clinically,[4, 5] since, as in the present case, this condition may be complicated by other liver disorders. It may occur as a complication of pulmonary tuberculosis, as a primary target organ in miliary tuberculosis, as a secondary target organ in the miliary form, or, rarely, as the only organ involved. The symptoms are generally nonspecific,[4, 5] with the most common complaints being fever, chills, anorexia, weight loss and vague abdominal complaints.[2] Recurrent hyperpyrexia, in the absence of more specific findings, associated with a history of exposure to tuberculosis should always arouse the suspicion of hepatic involvement by tuberculosis.[6] Physical findings are also vague and nonspecific, the most frequent being hyperpyrexia, hepatomegaly and abdominal fullness.[2] Jaundice, ascites and splenomegaly may occur, but they are uncommon. Anemia and leukopenia commonly occur.[2] Liver function studies are erratic[5] and depend on the type and extent of the liver involvement. The most constant abnormalities are found in the serum proteins where the globulins are generally elevated with a corresponding abnormality of the cephalin flocculation and thymol turbidity tests.[1, 2, 6, 7] Some authors[1, 8] report an elevation of the serum cholesterol, while others[2, 5, 7] do not. There may be elevation of the B.S.P. retention and serum alkaline phosphatase.[5, 7, 9, 10] Roentgenograms of the chest are often normal but may show a nodular infiltrate.[11] Skin tests are usually positive, but cultures of sputum, gastric washings and ascitic fluid for tubercle bacilli are often negative, unless the disease is widespread. The most useful diagnostic procedure is the percutaneous liver biopsy,[7, 11, 12, 13] which is being used with increasing frequency and safety since the introduction of the Menghini needle.[14, 15] Two case reports have been presented in which culture of liver biopsy specimens grew acid-fast bacilli.[16, 17]

This patient presented himself with complaints apparently unrelated to his fatal illness. His abdominal symptoms were vague and nonspecific, as were his physical findings. The liver function studies were in-

---

Edward N. Brandt, Jr., M.D., M.S., graduated from the University of Oklahoma School of Medicine in 1960 where he is now a senior N.I.H. Fellow in Biostatistics and a resident in Internal Medicine. In addition, he is an instructor in the Department of Preventive Medicine and Public Health and Research Associate in the Department of Mathematics.

Doctor Brandt is a member of the American Federation for Clinical Research, the Sigma Xi, the Biometrics Society, the American Statistical Association and the Institute of Mathematical Statistics.

Philip L. Stephenson, M.D., graduated from the University of Oklahoma School of Medicine in 1958 where he is now taking a residency in General Surgery.

dicative of biliary obstruction with secondary parenchymal damage, and would not be considered characteristic of hepatic tuberculosis. The entire clinical picture was thought to be most consistent with choledocholithiasis, but carcinoma of the pancreas was also strongly considered. Liver biopsy would propably have established the diagnoses of fatty metamorphosis and tuberculosis, but was thought to be contraindicated because of the marked elevation of the prothrombin time, not altered by vitamin K.

DIAGNOSIS

Mansuy[7] has suggested that tuberculosis of the liver should be suspected in any patient with fever, chills and hepatomegaly in the absence of discernible pulmonary involvement. He further suggested liver biopsy in suspected cases. Before this procedure was widely used most cases were diagnosed at operation. The diagnosis is often easier in jaundiced patients, since this immediately puts the hepatobiliary system under suspicion. Ross,[9] however, thinks that an elevated alkaline phosphatase with a normal serum bilirubin should make one suspect this entity in the absence of evidence of Padget's disease or metastatic malignancy. Clinically, tuberculosis of the liver may occur either as an acute or as a chronic disease.[1] The acute form is characterized by the relatively rapid onset of chills, fever and abdominal distress, and is often fatal, while the more common chronic form is characterized by the insidious onset of a more nonspecific illness. It generally leads to residual hepatic damage such as fibrosis or, more rarely, cirrhosis.[18] In patients with miliary tuberculosis involvement of other organ systems, especially the nervous system and adrenal glands,[11] may predominate, so that the diagnosis is even more difficult.[6] If the other symptoms lead to the diagnosis of miliary tuberculosis, however, the patient is likely to receive prompt and appropriate therapy. The differential diagnosis of hepatic tuberculosis must include[11, 18] hepatic abscess, cirrhosis, malignancies, gall bladder disease, sarcoidosis, histoplasmosis and other liver diseases. Tuberculosis of the gall bladder may occur[19] and may be associated with local hepatic tuberculosis.[18] It is a rare entity characterized by epigastric pain which is increased by food intake, a tender right upper quadrant mass and frequent association with calculi. Jaundice is rare. This clinical picture usually leads to laparotomy with cholecystectomy and establishment of the diagnosis.

PATHOLOGY

In tuberculosis the liver may be affected either directly or as a reaction to tuberculosis in other organs.[5] Direct liver involvement occurs in three forms:[5] (1) miliary granulomas; (2) aggregate granulomas (tuberculomas); and (3) canalicular or bile-duct tuberculosis. The last two forms are quite rare. With miliary tuberculosis the gross anatomic picture includes the presence of white nodules over the surface of the liver, especially on the under side of the left lobe.[5] Gross edema is often present.[5] Microscopically, four types of change occur.[5] The most common is nonspecific with small, irregular areas of focal necrosis and portal inflammation. This is similar to the picture seen in hepatitis and is usually severe. The second type is characterized by proliferation of the Kupfer cells, leading to a decrease in the diameter of the lumina of the sinusoids with consequent compression of the cells of the hepatic parenchyma leading to necrosis. Less commonly one may see small foci of caseation necrosis scattered irregularly through the liver. Finally, scattered epithelioid tubercules surrounded by Langhans-type giant cells may be the only manifestation of hepatic disease. In addition to these findings, Seife[12] reported the occurrence of fatty metamorphosis and frank hepatic cirrhosis in his series of biopsy specimens obtained from 70 patients. Popper[5] has found that, except in children, tubercle bacilli are rarely identified in pathologic preparations, and therefore, the diagnosis must be based on the histologic appearance or on the culturing of the organism from the needle biopsy specimens.

In cases of hepatic reaction to tuberculosis in other organs, one finds one of three microscopic pictures,[5] namely, (1) an infiltration with inflammatory cells but with-

out tubercles—the most common finding; (2) scattered histiocytic nodules; or (3) frank tubercles without caseation necrosis.

Various authors[4, 7, 8] have reported hepatic tuberculosis presenting clinically with obstructive jaundice. The reason for this is not always clear, although it is felt to be due either to compression of the bile ducts, either intra- or extrahepatically by lymph nodes or tubercles, or to spasm of the sphincter of Oddi secondary to inflammation of the biliary tree. Cruice[20] in 1914, when tuberculosis was more common, reviewed 1748 consecutive autopsies of jaundiced patients and found only seven due to tuberculosis. Our patient presented with laboratory data usually interpreted as indicative of obstructive jaundice. However, no anatomical evidence of biliary obstruction except for the marked intrahepatic bile stasis was demonstrated. The fatty metamorphosis and focal necrosis apparently accounted for his jaundice by parenchymal destruction. This pattern of laboratory data has been reported[5] to occur with fatty metamorphosis alone, but this is uncommon. The degree of his rapid hepatic decompensation attributable to tuberculosis is unknown, but anti-tuberculous therapy could have been of some benefit.

THERAPY

The treatment of hepatic tuberculosis generally yields satisfactory results if started early and if adequate. Isoniazid and para-aminosalicylic acid are the drugs of choice.[2] Isoniazid in particular should be used, because it seems to protect against meningeal spread.[2] Steroids have been added in severely ill patients with good results.[2, 21] Streptomycin has also been used successfully.[1] The U.S. Veterans Administration, in a cooperative study, reported over 90 per cent survival in an adequately treated group of patients with miliary tuberculosis.[11] This emphasizes the importance of early diagnosis and therapy. The usual response is one of rapid clinical improvement with lessening jaundice and disappearance of symptoms.[2] The proper duration of therapy is difficult to establish and must depend on the individual situation, considering the extent of organ involvement and the clinical response, but probably should be continued for at least one year.

SUMMARY

A case report and review of the literature of hepatic tuberculosis is presented. The diagnosis, pathology and therapy are discussed. The importance of prompt diagnosis is stressed because of the excellent response reported with early and adequate antituberculosis therapy. It is further stressed that liver biopsy is a valuable tool in establishing this diagnosis. □

BIBLIOGRAPHY

1. Curry, F. J., and D. Alcott: "Tuberculous Hepatitis with Jaundice," Gastroenterology 28: 1037, 1955.
2. Terry, R. B., and R. M. Gunnar, "Primary Miliary Tuberculosis of the Liver," Ann. Int. Med. 41: 251, 1954.
3. Gold, J., et al.: "Tuberculous Hepatitis," Gastroenterology 33: 113, 1957.
4. Vitug, W., et al.: "Hepatobiliary Tuberculosis—Its Diagnostic Problem," J. Philippine Med. Assoc. 34: 102, 1958.
5. Popper, H., and F. Schaffner: Liver: Structure and Function, McGraw-Hill Book Co., New York, 1957, pp. 551-557.
6. Neill, D. G.: "Tuberculosis of the Liver, Including a Report of Five Cases," Med. J. Australia 1: 893, 1951.
7. Mansuy, M. M., and W. J. Selferth, "Miliary Tuberculosis of the Liver: Liver Biopsy as an Adjunct to Diagnosis," Am. J. Med. Sci. 220: 293, 1950.
8. Cleve, E. A., et al.: "Atypical Tuberculosis of the Liver with Jaundice," Ann. Int. Med. 41: 251, 1954.
9. Ross, Richard S., et al: "The Serum Alkaline Phosphatase in Chronic Infiltrative Diseases of the Liver," Am. J. Med. 21: 850, 1956.
10. Korn, R. J., et al.: "Hepatic Involvement in Extrapulmonary Tuberculosis," Am. J. Med. 26: 60, 1959.
11. Biehl, J. P.: "Miliary Tuberculosis," Am. Rev. of Tuberc. and Pulm. Dis. 77: 605, 1958.
12. Seife, M., et al.: "A Clinical, Functional, and Needle Biopsy Study of the Liver in Pulmonary Tuberculosis," Am. Rev. Tuberc. 63: 202, 1951.
13. Arora, M. M., et al.: "Clinical, Functional, and Needle Biopsy Studies of the Liver in Tuberculosis," J. Indian Med. Assoc. 26: 341, 1956.
14. Menghini, G.: "One-Second Needle Biopsy of the Liver," Gastroenterology 35: 190, 1958.
15. Menghini, G.: "Two-Operator Needle Biopsy of the Liver," Am. J. Dig. Dis. 4: 682, 1959.
16. Healey, R. J., et al. "Needle Biopsy in Tuberculosis of the Liver with Culture of Acid-Fast Bacilli," Am. J. Dig. Dis. 4: 638, 1959.
17. Rumball, J. M., and G. L. Baum: "Liver Biopsy Culture in the Diagnosis of Miliary Tuberculosis." Gastroenterology 22: 124, 1952.
18. Leader, S. A.: "Tuberculosis of the Liver and Gallbladder with Abscess Formation: A Review and Case Report," Ann. Int. Med. 37: 594, 1952.
19. Schwartz, M., et al.: "Tuberculous Choleystitis," Am. Rev. Tuberc. 70: 734, 1954.
20. Cruice, J. M.: "Jaundice in Tuberculosis," Am. J. Med. Sci. 147: 720, 1914.
21. Lambros, T. A.: "Cortisone in the Therapy of Acute Miliary Tuberculosis," Lancet 1: 1370, 1958.

Computers in Modern Medicine*

JAMES A. HAGANS, M.D., Ph.D.
WILLIAM W. SCHOTTSTAEDT, M.D.

Computers of every variety, both digital and analog, both scientific computational and data processing, are rapidly finding their place in modern medicine on all fronts, both academic and/or practical.

IT IS NOT surprising that high-speed data-processing techniques developed most rapidly in a setting where the efficient handling of massive data and the rapid solution of complex mathematical problems was necessary. Thus, the need for such equipment became evident first in the physical sciences and in industry. Neither is it surprising that there was a considerable lag between the development of such machines and their application to the problems of the biologic and medical sciences. Not infrequently the developments occurring in the physical sciences remain unknown or unappreciated for years or decades. The flame photometer provides such an example within the recent past.

Data-processing equipment and computers are expensive. It is quite natural, therefore, that their development should have occurred in those areas where funds were readily available. Because of our post-war struggle for arms superiority, our need for space exploration, and our rapid industrial expansion, computers were first used in physics and engineering laboratories, in special goverment centers, and in large industrial enterprises. However, the rapid growth of the National Institutes of Health and the development of governmental and private agencies dedicated to the support of medical research have made it possible for medical centers to have high-speed data-processing and computer equipment.

There is scarcely an activity of modern medicine where one cannot conceive of some application of modern high-speed data-processing, storage and retrieval, or computing techniques. These techniques are pertinent to bedside care, operating room procedures, or the interpretation of obscure laboratory data just as certainly as they are to public health surveys or to large-scale epidemiologic studies.

Opinions vary widely on the subject of what the major contributions of the computer will be in medical science. The more skeptical feel only that it will force the medical disciplines to be more quantitative and more objective, thus minimizing the tendency to pass judgment on biased personal opinion. "Actual experience, objectively recorded and analyzed" will determine solutions to problems rather than casual opinions. Clinical medicine will then be more nearly a clinical medical science. Others see the greatest impact of the computer in other areas. One group[1, 2, 3, 4] sees the great strides forward in terms of human simulation techniques using the analog computer. Another group[5, 6, 7] sees tremendous potential in the development of data-storage techniques and information-retrieval through the use of the digital computer. These techniques are of special value to the hospital registrar, the hospital business manager, the epidemiologist, and the public health statistician. Still another group sees the computer essentially as a greatly advanced, more talented desk calculator. Biostatisticians, mathematicians, and investigators in biomedical research are most apt to hold this view. The computer saves them endless hours of dull and uninteresting labor.

The application of computer techniques to

*Department of Preventive Medicine and Public Health, University of Oklahoma Medical Center.

the biomedical sciences have been summarized as follows:[8]

1. The acquisition, control, and reduction of large amounts of data.
2. The analysis of research data which are the results of laboratory measurements.
3. The simulation of biologic systems by mathematical (analytic) and empirical or stochastic (non-analytic) techniques.
4. The storage and retrieval of research information.
5. The use of digital computers in relation to the needs of the physical and biologic sciences.

One can readily understand the value of computer techniques to the record office of the central Veterans' Administration Hospital groups. It is only a short step in imagination to see the possibility of a network of data reporting centers in, for example, the United States Public Health Service. In such centers health information could be accurately recorded and rapidly transmitted at regular intervals to give a complete and current picture of the nation's health and health problems. The possibility of analyzing many physiologic parameters simultaneously in medical research has become a practical reality. Industry has already introduced a monitoring system of computers programmed to feed back instructions controlling plant operations. It should be possible to use similar techniques in medicine to monitor and analyze pulse, blood pressure, respiration, and EKG data, using this as a basis for automatic control of anesthetic mixtures during operation. Similar equipment could also be used to control the rate of drip in giving pressor-amine solutions or other drugs affecting the cardiovascular system. The possibilities here are numerous.

It is difficult to predict the ultimate place of electronic data-processing and computer equipment in the field of medicine. It is not difficult, however, to see that such equipment can play a vital role in the future of medicine. There is a great need for readily available equipment and well-trained personnel to develop this area. The biologic and medical sciences are far behind the physical sciences and industry. We can no longer afford to delay but must make all haste forward to bring the developments of modern electronics and engineering, physics and mathematics to bear on the problems of medical research and patient care. To this end, the Department of Preventive Medicine and Public Health of the Oklahoma University School of Medicine has developed a Biostatistical Unit, now in its fifth year of operation, and is currently developing a Medical Research Computer Center. These activities are aided financially by the National Institutes of Health and have been made possible locally by the willing cooperation of the staffs at both Oklahoma University and Oklahoma State University. □

James A. Hagans, M.D., Ph.D., received his M.D. degree from the University of Cincinnati College of Medicine in 1946 and his Ph.D. from the University of Oklahoma, Department of Preventive Medicine and Public Health (Biostatistics) in 1960. Certified by the American Board of Internal Medicine, he is now Assistant Professor in the Department of Preventive Medicine and Public Health at the OU Medical Center and Director of Biostatistical Unit and the American Medical Research Computer Center.

Doctor Hagans is an associate member of the American College of Physicians, the Phi Beta Kappa, the Biometrics Society, the American Statistical Association and the Institute of Mathematical Statistics.

William W. Schottstaedt, M.D., graduated from the University of California School of Medicine in 1948. He is now Chairman of the Department of Preventive Medicine and Public Health at the University of Oklahoma Medical Center.

Doctor Schottstaedt is a member of the American Public Health Association, the American Psychosomatic Society and the Southern Medical Association.

REFERENCES

1. Stacy, R. W., and Giles, F. M.: Computer Analysis of Arterial Properties Circulating Research, Vol. 7, pp. 1031 ff, November, 1959.
2. Stacy, R. W., and Coulter, N. A.: Simulation of Human Physiological Systems, A.S.M.E., Publication No. 60, AV, 38, April 25, 1960.
3. Clymer, A. B.: Accomplishments in Human Sanitation, A.S.M.E. Publications No. 60, AV, 26, April 18, 1960.
4. Clymer, A. B., Ax, A. F.: Possibilities for Human Simulation, A.S.M.E. Publications No. 60, AV, 30, April 25, 1960.
5. Weinrauch, H., and Hetherington, A. W.: Computers in Medicine and Biology, J.A.M.A., Volume 169, pp. 240 ff, January 17, 1959.
6. Editorial, Electronic Data Processing Apparatus, J.A.M.A., Volume 173, pp. 58 ff, May 7, 1960.
7. Fein, L.: The Computer—Related Sciences (Synnoetics) at a University in the Year 1975, The American Scientist, Volume 49, No. 2, pp. 149ff, June, 1961.
8. Shapiro, N.: From remarks at Address Delivered to the NIH Sponsored Workshop on Bio-medical Computing held at Ohio State University July 3rd to 13th, 1961.

FAA Scientists Given Faculty Appointments

Four scientists with the Federal Aviation Agency and Oklahoma City University have been given faculty appointments at the School of Medicine.

Accepting part-time teaching positions were: Stanley R. Mohler, M.D., director of FAA's Civil Aeromedical Research Institute, associate professor of research preventive medicine and public health; Lerner B. Hinshaw, Ph.D., CARI physiologist, and Kurt A. Weiss, Ph.D., head of OCU's Department of Biology, associate professor of research physiology; and Jerry Vernon Tobias, Ph.D., director of the FAA section on perception, assistant professor of research communication disorders.

WEISS

Doctor Mohler was medical officer at the Center for Aging, National Institutes of Health, Bethesda, Maryland, before taking over the CARI director post. He received his M.D. degree at the University of Texas in 1956.

TOBIAS

Doctor Hinshaw joined the CARI group from the University of Minnesota, where he was a research fellow, instructor and assistant professor. He was a 1959-61 recipient of the Lederle Medical Faculty award. His Ph.D. was conferred by the University of Southern California.

Doctor Weiss was associate professor of physiology at the University of Miami before assuming duties at OCU last year. He received the Ph.D. degree at the University of Rochester. Doctor Tobias completed work for his advanced degree at Western Reserve in 1959; formerly was with the psychology department at the University of Texas. □

Faculty Appointments Announced

A dental surgery chief and a new associate professor of medicine are among the latest faculty appointments at the University of Oklahoma School of Medicine.

Carl E. Schow Jr., D.D.S., formerly in the private practice of oral surgery at Lawton, became the first full-time head of the Division of Dental Surgery and also directs an oral surgery training program supported by a National Institutes of Health grant. He received his dental degree in 1946 at St. Louis University; interned and took residency work at the University of Tennessee and the OU Medical Center.

SCHOW

Newcomer to the Department of Medicine is Marshall E. Groover Jr., M.D., who has the additional position of scientist with the new Neurocardiology Research Center. Doctor Groover was chief of the Aviation Medicine Clinic at the Pentagon and on the staff of the Southwest Foundation for Research and Education, San Antonio, Texas, before coming here. A 1934 graduate of the Medical College of Georgia, he interned at University Hospital, Augusta, and received a Master of Public Health degree in 1940 at Johns Hopkins University School of Hygiene.

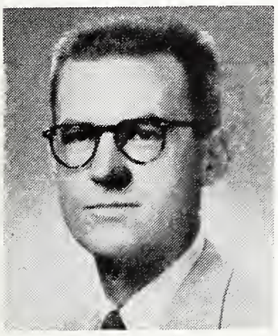
New instructors include Teresa B. Haddy, M.D., in the Department of Pediatrics, and Lou Ann Pilkington, Ph.D., in the Department of Physiology.

Doctor Haddy, a 1946 graduate of the University of Minnesota Medical School, was school physician for the city of Minneapolis and subsequently in private practice in Arlington Heights and Des Plaines, Illinois, before coming here with her husband, Doctor Francis J. Haddy, chairman of the Department of Physiology.

Doctor Pilkington completed studies for both her master's degree and Ph.D. in the Medical Sciences division of OU's Graduate College and received the advanced degree last summer. □

Lyle W. Burroughs, M.D. Joins Department of Pediatrics

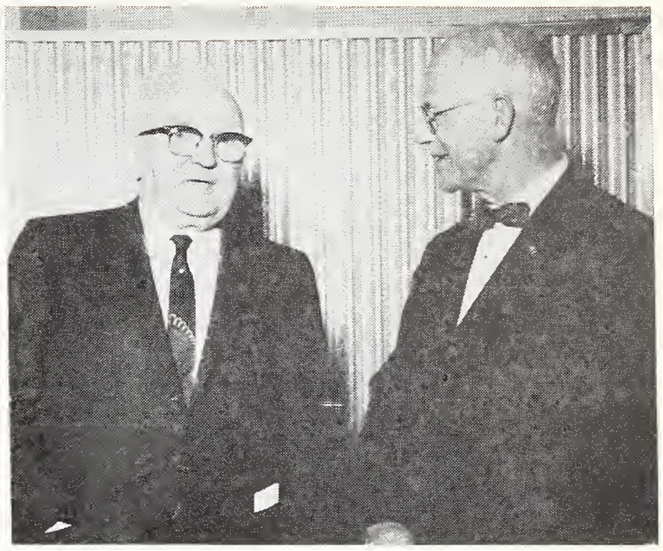
Lyle W. Burroughs, M.D., has been named Assistant Professor of Pediatrics at the University of Oklahoma School of Medicine.



BURROUGHS

Doctor Burroughs graduated from Washington University School of Medicine in St. Louis, in 1948. Following completion of his pediatric residency training in St. Louis, he obtained fellowship training in allergy at the Children's Hospital, Columbus, Ohio.

Prior to coming to the OU Medical Center, Doctor Burroughs was in charge of the pediatric allergy program at the Children's Hospital of Columbus, Ohio State University School of Medicine. □



Joseph T. Martin Honored

Cited for a half century of service, Joseph T. Martin, M.D., left, headed a list of 86 faculty members who recently received service pin awards at annual ceremonies at the University of Oklahoma Medical Center. Dean Mark R. Everett, right, presented the awards. Doctor Martin is professor emeritus of medicine.

OSMA REGIONAL POSTGRADUATE COURSES

Valley View Hospital
Ada
March 20, 1962

"THE COLON"

Western Hills Lodge
Sequoyah State Park
(Wagoner)
March 27, 1962

AFTERNOON

4:30 p.m.	Physiology
5:00 p.m.	Functional Diarrhea and Constipation
5:30 p.m.	Diverticulosis and Diverticulitis

EVENING

6:00 - 7:00 p.m.	Dinner
7:00 p.m.	Polyps and Neoplasms
8:00 p.m.	Problem Case: Ulcerative Colitis

Instructors: Merlin K. DuVal, Jr., M.D., Robert A. Schneider, M.D.
Jack D. Welsh, M.D.

REGISTRATION FEE $7.50 (Includes Dinner)

AAGP Category 1 Credit—Four Hours

TELL YOUR CONGRESSMAN HOW YOU FEEL ABOUT H.R. 4222

PUT IT IN

Register opposition

H.R. 4222: A DIGEST

Name. H.R. 4222, 87th Congress, was introduced by Cecil B. King, Representative from California, on February 13, 1961. A similar bill, S. 909, was introduced in the Senate by Senator Clinton P. Anderson, New Mexico. The measure is now pending before the second session of the 87th Congress, and is presently being held in the House Ways and Means Committee, Representative Wilbur Mills, Arkansas, Chairman. H.R. 4222 is also referred to as the **King Bill, the King-Anderson Bill, the Medical Aid For the Aged Bill,** or **the Social Security Health Bill.**

Taxes. The bill would amend the Social Security Act by adding health care benefits to the Social Security program, to be paid for by an increase in the Social Security Tax rate and an expansion in the taxable wage base. The taxable wage base would rise from $4800.00 per year to $5200.00, and the tax rate would increase by ¼ of one per cent for both employee and employer. During the first-year operation, estimates of the total cost range between $1.1 billion and $2.4 billion, with the latter a more realistic figure. Ultimately, annual costs are estimated at $7 billion per year. A wage earner making $5200.00 per year would have his annual earnings taxed $507 for total Social Security purposes during the first year of the King-Anderson proposal.

Benefits. H.R. 4222 would provide up to 90 days inpatient hospitalization and up to 180 days nursing home services, with a unit formula of one day hospital care equals two days nursing home care (150 units offered per year). Each person would pay a deductible for inpatient hospital care ranging from a minimum of $20 to a maximum of $90 ($10/day for 9 days). Moreover, there would be a $20 deductible on each outpatient diagnostic examination. A "benefit period," governed by the 150 unit value limitation, could begin again 90 days after discharge from hospital or nursing home. Other benefits include a program for home health care services.

Eligibility. All persons over 65 who are currently receiving Social Security cash benefits are eligible. In addition, health services will be offered to persons who are eligible for Social Security cash benefits, even though they are earning too much privately to receive them. In 1963, 14½ million persons would be eligible.

Government Control. Here are a few of the provisions: Hospitals must have agreement with government (patient may not go to non-participating hospitals); government determines which services are "customary" or "generally provided"; teaching program of participating hospitals to be approved by government; government will control designation of drugs; government may determine "adequacy" of hospital records; Secretary of Health, Education and Welfare is given broad, regulatory powers, to include the establishment of "reasonable" compensation of hospitals. □

Writing Your Congressman . . .

"The writer does the most who gives his readers the most knowledge, and takes from him the least time."

Writing your Congressman is a mark of good citizenship, and a letter to him every so often, expressing your views on a particular subject, is your responsibility as a person privileged to live in a democratic society. He will respect your opinions, and will be guided in his voting by the response received from his constituents. To remain silent on key issues, such as the King-Anderson Bill, will give undue influence to small but noisy pressure groups.

Here are a few tips on letter writing . . . keep it brief and clear . . . confine your let-

WRITING!

o H.R. 4222!

PROTECT HEALTH CARE FREEDOM AND PRESERVE REPRESENTATIVE GOVERNMENT

H.R. 4222: THE ISSUE

The real issue is *not* health care for the aged. Everyone agrees that all of our elderly should receive all of the health care they need, when they need it. The real issue is *how* health care for our aged can *best be provided* . . . whether the program should be *voluntary* or *compulsory*.

American Medicine and its many allies in this struggle to preserve freedom of health care, believe that present methods of financing health care, including the government's Kerr-Mills Law, are capable of insuring the health protection of all Americans, old or young; that there is *no need* to impose the expense, waste and regimentation of the King-Anderson Bill upon the American people.

Below are a few facts to justify this position (there are many more):

Voluntary Health Insurance Coverage. More than 9,000,000, or 53 per cent, of the aged have health insurance, triple the coverage of ten years ago. New, improved insurance programs are constantly being developed.

The Kerr-Mills Law. For the elderly unable to buy health insurance, there is 1960's Kerr-Mills Law. Through this Federal-State matching funds program, individual states may guarantee health care to every aged American who needs it. In addition to helping 2½ million Americans covered by Old Age Assistance, the law is designed to benefit all other older persons who could not meet the costs of a prolonged, serious illness. *It helps those who need help*, and provides for state design, administration and control. In Oklahoma, 40 per cent of the total over-65 population is eligible for health care under the Kerr-Mills Law; nearly $20 million was spent for this purpose in 1961!

H.R. 4222: The Need? The growth, availability and quality of voluntary health insurance, coupled with the provisions of the Kerr-Mills Law, decry the need for H.R. 4222.

H.R. 4222: The Cost? Passage of the King-Anderson Bill would cost Oklahoma taxpayers an estimated $25 million per year, to fill a need already being met.

H.R. 4222: The Waste? Millionaires would have tax-financed health care under the proposal, with low-income persons forced to foot the bill. H.R. 4222 is compulsory socialized medicine for a segment of the population, regardless of whether those over-65 want it or need it.

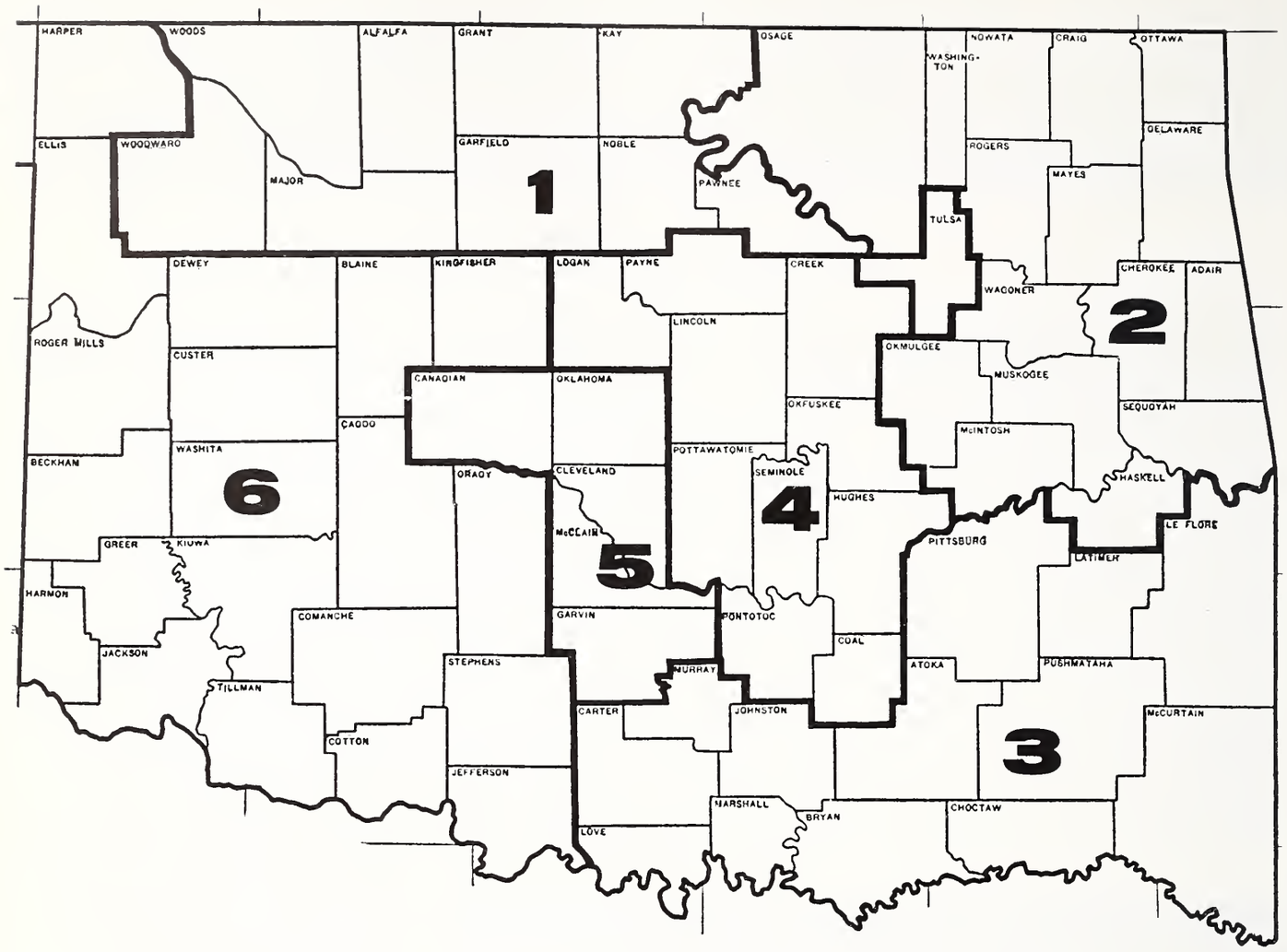
H.R. 4222: Expansion. Advocates of H.R. 4222, including the Socialist Party, predict and are pledged to the future expansion of the program until it covers all Americans. It would establish a gigantic health care bureaucracy in Washington to lead America down the ill-fated path of complete socialized medical care. □

. . . Tips and Campaign

ter to one subject . . . support your position with facts . . . neither threaten nor promise . . . ask for his position.

On the King-Anderson subject, lift your arguments from the facts presented on these pages, adding your own observations and findings. Since volume is important, set yourself a monthly letter-writing goal: *two letters* from you *each month* and *the same from ten friends*. Remind your friends each month with a *postcard* or *telephone call*. Supply them with reprints of this article, now available from the Oklahoma State Medical Association.

See the following page for a guide to the distribution of your letters.



DISTRIBUTION OF LETTERS

Write to both Oklahoma Senators and the Representative from your Congressional District. (The map above indicates the Congressional Districts, with numbers corresponding to U. S. Representatives below.)

Representatives

1. Page Belcher (R)
   Enid
2. Ed Edmondson (D)
   Muskogee
3. Carl Albert (D)
   McAlester
4. Tom Steed (D)
   Shawnee
5. John Jarman (D)
   Oklahoma City
6. Victor Wickersham (D)
   Mangum

Senators

1. Robert S. Kerr (D)
   Oklahoma City
2. A. S. Mike Monroney (D)
   Oklahoma City

ADDRESS: The Honorable John Doe, M.C.
House Office Building
Washington 25, D.C.
"Dear Representative Doe:"

ADDRESS: The Honorable John Doe, U.S. Senate
Senate Office Building
Washington 25, D.C.
"Dear Senator Doe:"

Send Carbon Copies of Letters To:

The Honorable Wilbur Mills, M.C.
Chairman, Ways and Means Committee
House Office Building
Washington 25, D.C.

The Oklahoma State Medical Association
P.O. Box 9696
Oklahoma City, Oklahoma

a medical milestone at America's crossroads

AMA 111th Annual Meeting

CHICAGO'S MAGNIFICENT McCORMICK PLACE • JUNE 24-28, 1962

This is Chicago's splendid, new exposition center offering every conceivable convenience in the nation's most exciting convention city. More than a convention hall, McCORMICK PLACE is a complex of unobstructed exhibit area, spacious meeting rooms, beautiful theaters, glamorous restaurants and lounges, and colorful promenades adjacent to huge parking lots and enticing lagoons. And in this spectacular setting on the shores of Lake Michigan just a summer stroll from midtown hotels, stores and entertainment districts, air-conditioned McCORMICK PLACE offers you the unsurpassed opportunity to participate in the most comprehensive of all medical meetings, the ultimate in post-graduate education.

IT'S ALL FOR YOU ★ CONVENIENT, COMPACT, AND AIR-CONDITIONED ★ AT THE CROSSROADS CHICAGO ★ THE PLACE TO KEEP PACE IS McCORMICK PLACE!

Here, completely assembled—all in this one building—will be the greatest cross-section of every medical interest:

★ More than 200 eminent scientists in the Multiple Disciplinary Research Forum

★ Eight general programs, never before scheduled, by the combined specialties

★ Over 700 exhibits staffed by top researchers and expert technologists

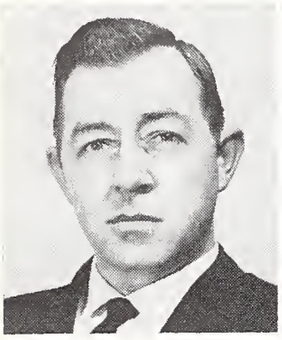
★ Surgical innovations and symposia on live color TV and motion picture premieres

★ Special daily features representing each medical discipline—and countless other vital programs to serve you in your practice

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago 10, Illinois

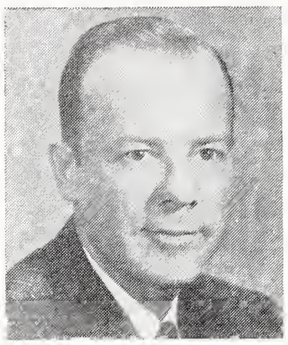
See JAMA May 19 for complete scientific program . . . for physician advance registration and hotel reservation forms

'Investment Planning' Topic For Annual Meeting



ROBERT E. LEE

WILLIAM N. BRET



CHARLES L. THOMPSON

A significant feature of the 1962 annual meeting of the Oklahoma State Medical Association will be a special conference on Investment and Estate Planning, scheduled for the Monterey Room of the Skirvin Hotel, May 7th, from 9:00 a.m. until noon.

Physicians and their wives (especially) are invited to attend the interesting section meeting planned by Mr. Ray Dusek, Resident Vice-President of Merrill Lynch, Pierce, Fenner and Smith, Oklahoma City. The complexities of modern-day financial planning will be simplified and clarified by expert speakers in their fields, and all participants are expected to gain useful, practical knowledge in the management of their fiscal affairs.

The conference is part of the most diversified annual meeting program ever presented by the Oklahoma State Medical Association. Program Chairman Rex Kenyon's "Three Ring Circus" approach to the overall annual meeting program will also include "special-interest" section meetings on Americanism, Legal and Tax Problems, Urology, Office Pathology, Internal Medicine, Surgery and Obstetrics-Gynecology.

Rounding out the "something-for-everybody" annual meeting format, and providing the focal point for the educational programming, will be a "general-interest" meeting featuring ten out-of-state physicians, who will present twenty scientific papers on their specialty subjects.

The "general-interest" program will be held in the Venetian Room of the Skirvin from 2:00 p.m. until 5:00 p.m. on Saturday, May 5th, and from 9:00 a.m. until 5:00 p.m. on Sunday and Monday, May 6th and 7th. Running concurrently with the "general-interest" program, the "special-interest" section meetings will be held in the Regency and Monterey Rooms of the Skirvin from 2:00 p.m. until 5:00 p.m. on Saturday, from 9:00 a.m. until 5:00 p.m. on Sunday, and from 9:00 a.m. until noon on Monday.

A record attendance is expected for the May 5-7 event, owing to the diversity of programming and the convenient weekend dates.

Estates, Pensions, Securities

First speaker on the Investment and Estate Planning Program is Robert E. Lee, Vice-President of Oklahoma City's First National Bank and Trust Company, who has chosen the topic, "Estate Planning for the Modern Physician."

Mr. Lee, currently an executive in the Bank's Trust Department, received his education at West Point and the University of Oklahoma, the latter awarding him a law degree in 1952. He formerly served as Assistant General Attorney for the Rock Island Railroad and as a member of the legal department of Amerada Petroleum Corporation.

Second speaker of the morning program is Mr. William N. Bret, Jr., Attorney, Consultant Actuary, and Partner in the firm of Arthur Stedry Hansen, Consulting Actuaries, Dallas, Texas. His presentation is entitled "Pension Plans."

He attended Iowa, Oklahoma and St. Mary's Universities, and graduated from St. Louis University with an LL.B. degree in 1950. In addition to other professional and civic affiliations, Mr. Bret is an Associate Member of the Conference of Actuaries in Public Practice.

Speaking on the topic "Fundamentals of Investing in Securities," will be Mr. Bill L. Wise, Account Executive of Merrill Lynch, Pierce, Fenner and Smith.

Mr. Wise has received a B.S. degree from the University of Oklahoma, and an LL.B from Oklahoma City University. He has been an Account Executive for the investment firm for the past ten years. Extra-employment activities include his current service as Treasurer, Oklahoma University Alumni Association.

The concluding speaker on the Investment and Estate Planning Program is Mr. Charles L. Thompson, also an Account Executive with Merrill Lynch. His presentation will be "Current Outlook for the Securities Market."

The veteran investment counselor received a Bachelor's Degree from Oklahoma State University and a Masters Degree from Cornell University. He will discuss short and long-range trends in the American economy, relating these trends to investment planning prospects.

Business Meetings

OSMA's Board of Trustees will meet on the afternoon and evening of Friday, May 4th, in the Venetian Room of the Skirvin Hotel. The House of Delegates will convene at 10:00 a.m. the next morning, May 5th, in the Persian Room of the Skirvin Tower Hotel.

Speaker of the House of Delegates, Marshall O. Hart, M.D., Tulsa, is urging all county medical societies to develop resolutions on subjects of interest to organized medicine and/or to the health and welfare of the general citizenry at the March meetings of the county groups. He is reminding county society officers and delegates to the OSMA that such resolutions must be mailed to the OSMA Executive Office prior to April

5th (30 days in advance of the House of Delegates meeting).

Officers to be elected at the Delegates' meeting are: President-Elect, Vice-President, Secretary-Treasurer, Delegate and Alternate Delegate to the AMA, Speaker and Vice-Speaker of the House of Delegates, and Trustees from Districts 1, 4, 7, 10, 13. County medical societies have been advised to caucus before the meeting regarding nominations to office.

Billy May to Play

The President's Inaugural Dinner-Dance, scheduled for Monday evening, May 7th, in the Persian Room of the Skirvin Tower Hotel, will feature the entertainment of the Billy May Orchestra.

A poolside social hour at the Skirvin's Sun Suite will open the evening's activities, followed by the inaugural dinner and dancing. J. Hoyle Carlock, M.D., Ardmore, will be installed as President during inaugural ceremonies. Featured speaker for the dinner will be Senator Robert S. Kerr. □

Physical Scientists To Join Medical Scientists In Research Problems

Three physical scientists from the University of Oklahoma at Norman will spend four hours a week at the OU Medical Center to consult with medical scientists on research problems of mutual interest.

The collaborative program started this month under auspices of the Medical Center's Biostatistical Unit and new Medical Research Computer Center, of the Department of Preventive Medicine and Public Health.

Professors are Jack Powers, in chemical engineering, James Burwell, physics, and Kenneth Watson, electrical engineering. They will work with biological and medical scientists in those areas of the physical sciences pertinent to their research.

"The arrangement is an attempt to bridge the wide gap existing between the physical and biomedical sciences which has resulted from the classical pattern of education," said Doctor James A. Hagans, director of the Biostatistical Unit and the computer center.

He added: "Modern biomedical research and modern biophysical disciplines have major areas of overlapping research interests, and together are maximally situated to contribute to the continued struggle to understand human disease." □

CD Health Mobilization Course—March 28-30

Continuing an "all-out" effort to achieve civil defense readiness at the local level, the Oklahoma State Department of Health, in cooperation with Oklahoma Civil Defense and the U.S. Public Health Service will present a free State Line Civil Defense Health Mobilization Training Course, March 28, 29, and 30, 1962. Site of the conference will be the new $4 million Adult Education Center located at the University of Oklahoma Center for Continuing Education in Norman.

Purpose

Purpose of the three-day meeting will be to mark the beginning of an intensive program in Civil Defense Health Organization in the State of Oklahoma. An objective of the conference is to develop the organization of medical and health service teams —to be known as Health Mobilization teams—at the local level. State and local health and civil defense authorities will be briefed on National and State Mobilization plans to help implement local planning at a more rapid rate. National and State programs of health services in emergencies will be outlined to attending groups. Local responsibilities will be discussed and the use and operation of the 200-bed emergency hospital will be demonstrated.

Subjects

Participants will hear discussion on: The National Civil Defense Plan; The Oklahoma Civil Defense Plan; The Function of the Office of Emergency Planning in National Defense; Operational Problem; National Health Mobilization Program; Community Health Mobilization Team; Medical Self-Help; Medical Stockpile; Care of Mass Casualties, Expanded Medical Service in an Emergency; Circulating Stockpile; Chemical and Biological Threat and Defense; Health Aspects of Nuclear Radiation; Environmental Health in a Disaster; Behavior Expectations in Major Disasters; Expanding Hospital Services in a National Emergency; and, Operational Problem Report.

Registration

Housing reservations in the center will be $4.50, $6.00 and $7.00 per person. Pre-registrations may be made by writing to Mr. Lee Hayden, Director, Short Courses and Conferences, Extension Division, University of Oklahoma, Norman.

Chairmen of county medical society Disaster Medical Care Committees are urged to attend. □

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

"but why don't you tell my patients...?"

We pharmaceutical manufacturers, over the past several years and in various ways, have been trying to tell the story of the drug industry's role as a member of the American health team, and thus to correct certain unfortunate misconceptions. And all along we have looked upon you of the medical profession, on whose good will we are so dependent, as perhaps our chief audience.

But now we wonder . . . because so many of you have said to us lately, either orally or in writing, "Why are you telling us this? Our patients are the ones who really need to hear this story."

Thank you for pointing out this need; and for the aid some of you have already given us. We think we can now be of still more help in answering many of the questions your patients are asking:—

A good number of us have Speakers Bureaus. If you will designate the place and time, we will have an industry speaker on hand to address any favorite organization of yours . . . be it a civic, political, or church group; your local PTA; a social club, or a fraternal order.

You have only to send a letter or post card, giving the particulars, to the Office of Public Information, Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D.C. (or phone, National 8-6435). They will make the necessary arrangements* (or promptly let you know if there's any hitch).

* But please try to give at least three weeks' notice.

Five OSMA Scholars Selected

The OSMA's Financial Aid to Education Committee has named five pre-medical students to receive $500 scholarships for academic excellence when they enroll at the University of Oklahoma School of Medicine next September.

Recipients of the OSMA awards were selected on the basis of overall scholastic achievement, in keeping with the House of Delegates action in 1961. The records of more than twenty applicants were reviewed on February 7th at a meeting of the OSMA committee.

Students winning scholarships are Kenneth M. Allum, Jr., Tulsa, Edward Gwin, IV, Ada, Muriel E. McGlamery, Mooreland, John F. Schuhmacher, Alva, and William H. Smith, II, Norman.

The students have been notified of their awards by Walter E. Brown, M.D., OSMA past president and chairman of the Financial Aid to Education Committee. Checks will be issued to them at the time of matriculation to the medical school.

Other members of the OSMA committee are: Clinton Gallaher, M.D., J. Hoyle Carlock, M.D., Alfred T. Baker, M.D., and E. C. Mohler, M.D.

Funds to finance the scholarship program, as well as grants-in-aid and loan programs, are being obtained through a $5.00 increase in OSMA dues; $3.00 of which is to be used for the establishment of a loan fund for University of Oklahoma medical students, and $2.00 of which is to be earmarked for scholarships and grants-in-aid. The dues increase will raise about $8,000 annually, which will provide approximately $3,200 per year for scholarships and grants-in-aid, and about $4,800 per year for loans.

Complete details for the administration and accountability of the financial aid program will be reported by Doctor Brown at the 1962 annual meeting of the House of Delegates.

Bankers Service Life Indicts M.D.s, Hospitals

Mr. Joe C. Scott, president of Bankers Service Life Insurance Company, recently mailed policyholders a letter in which he alleged that physicians and hospitals were altering claim forms after the policyholders had signed them. The unwarranted charges made by Mr. Scott are found in the following copy of his letter.

BANKERS SERVICE
LIFE INSURANCE COMPANY
Joe C. Scott, President
Oklahoma City 2, Okla.

My dear Policyholder:

I just wanted you to know that we have appreciated you as a policyholder throughout the time that you have had your policy, but especially as we approach the New Year I wanted to express my appreciations to you for being a policyholder with our Company.

I also wanted to suggest that since there is more illness during the winter and spring months that if you have need to go to the hospital or use your policy in any way that you get the forms filled out and send them or have them sent to us as quickly as possible.

We have more trouble getting the claim forms filled out by the hospital and doctor than any other thing. I suggest that if you can do so that you not give an assignment to the hospital, but let us pay our claims directly to you and then you pay the hospital bill and you will save a lot of money. Many times the hospital or doctor puts things on your claim form after you have signed it that you don't know anything about and this makes the hospital cost excessive. So, it will reduce the claim cost on your policy very much if you will let us pay you directly instead of the hospital.

With deep appreciations to you personally and with every good wish for the New Year, I am,

Sincerely,
(signed) Joe C. Scott, President
Bankers Service Life
Insurance Company

JCS:eg

P.S. If you have a friend that you would like to have information about our policies, please write his or her name on the front or back of this letter and return it to us with your next premium payment. Remember, our rates never raise and we have one of the best claim payment records in the world. □

Letters to the Editor

January 19, 1962

Editor
Journal of Oklahoma State Medical Association
P.O. Box 9696, Shartel Station
Oklahoma City, Oklahoma

Dear Sir:

Mail order prescriptions represent a mushrooming problem in connection with public health. A few of the dangers inherent in this type of operation include: Absence of the physician-pharmacist-patient relationship, difficulties in checking prescription files, delay in obtaining medication, and great costs involved in determining whether a mailed ℞ was actually written by a physician.

Certainly, in combating this evil, the physician and pharmacist need each other's help. In this connection —if you haven't already done so— would you consider writing a brief piece, warning your physician-readers of the dangers which mail order ℞s hold for their patients?

May I hear from you about this? Thanks!

Interprofessionally yours,
IRVING RUBIN, Ph.G.
Editor
American Professional Pharmacist

We asked C. J. Masterson to comment on Mr. Rubin's letter.

January 30, 1962

Dear Sir:

As I understand the situation, the doctor, as well as the pharmacist, will lose many of his contacts and connections with the patient. Instead of having a friendly, professional, ethical atmosphere, it will be strictly non-professional, and we will have very little in common. There

will be more self-medications such as the patient will get a prescription refilled for all of his friends and neighbors. It will be impossible for a mail-order house to refer or suggest to the patient that he should see his doctor before refilling the prescription.

Another thought in regard to this matter is that for years the people in each community have built the community. I feel very keenly that a mail-order house in Kansas City, Chicago, New York, or any part of the country, has done very little to help build our city or state. Neither have they paid any taxes to support the building of it.

Due to the fact that it is strictly a cold-blooded, monetary movement, I feel that it is a poor way for a pharmacist or a physician to want his customers and patients to follow. According to our federal mailing laws, it is illegal for any narcotic or exempt narcotic to be sent through the mails. With this in mind, I think it would create a bad atmosphere or hazard.

I think it is something which cannot be controlled, and it is wrong to do anything where a party cannot control it, or know what is going on.

Thank you for your interest.

Sincerely,
C. J. MASTERSON,
President
Connie's Prescription Shops

January 24, 1962

Editor
Journal of Oklahoma State Medical Association
P.O. Box 9696
Oklahoma City, Oklahoma

Dear Sir:

Since 1957, infectious syphilis has been increasing at an alarming rate in all races, sexes, ages, social groups, and geographic areas. Physicians who have not observed a single case of infectious syphilis in 20 years suddenly are finding it among their patients.

Concurrent with this resurgence, unfortunately, is a paucity of venereal disease literature and information available to the private physician.

To partially alleviate this situation and serve a pressing need, the Venereal Disease Program of the Public Health Service routinely abstracts current articles on venereal diseases from almost 1,000 journals both domestic and foreign. A publication entitled "Current Literature on Venereal Disease" including these abstracts is printed three or four times a year and indexed annually. It is distributed regularly free of charge to physicians on their personal request.

Will you please, as a service to your readers, alert them to the availability of this publication and suggest that if they wish to receive it, they may write to Communicable Disease Center, Atlanta 22, Georgia, Attention: Dr. William J. Brown, Chief, Venereal Disease Branch, requesting that their names be added to the mailing key for "Current Literature on Venereal Disease."

Sincerely yours,
WILLIAM J. BROWN, M.D.
Chief, Venereal Disease Branch
Department of Health, Education and Welfare

OSMA JOURNAL / deaths

C. WESLEY MORGAN, M.D.

1910-1962

C. Wesley Morgan, M.D., 48-year-old Oklahoma City physician, died January 15, 1962.

A native of Little Rock, Arkansas, Doctor Wesley graduated from Meharry Medical College in Nashville, Tennessee in 1939. He had practiced in Oklahoma since the following year.

Doctor Morgan was a member of the Oklahoma Chapter of the American Academy of General Practice.

Miscellaneous Advertisements

OKLAHOMA HOSPITAL / CLINIC FOR SALE (20 bed, 1800 square feet clinic), fully equipped; established 23 years; 1961 gross $100,000 without major surgery; present owner desires to limit practice to dermatology and associate is leaving state; unopposed general practice opportunity; excellent farming community; completely air-conditioned brick; liberal terms available. Write Key A, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

SURGEON DESIRES practice opportunity in Oklahoma. Graduate University of Virginia, 1952, Board Certified. Residency training at Sloan-Kettering Institute, University of Virginia Hospital and Lahey Clinic, Boston. Contact Euclid Murden Hanbury, Jr., M.D., 1500 Amherst Street, Charlottesville, Virginia, Telephone 6-1000.

GP PARTNER WANTED: Suburban Oklahoma City in GP clinic. Financial arrangements completely open first year, partnership to follow. Please give experience, training, religion, family, first letter. Desire American born veteran. Contact Key B, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

OFFICE SPACE FOR RENT. Medical or Dental. Air conditioned. Reasonable rent. Hospital area. 437 N.W. 13th, Oklahoma City. Call (days) CE 5-6461.

FOR SALE: 100 x 100 Keleket X-Ray. Complete with two tubes, tilt table, and all kinds of accessories. Phil White, M.D., VI 3-4701.

The constitution of every county medical auxiliary contains, with the exception of minor variances in punctuation, and in some cases the additive: "to cooperate with the state and national auxiliaries," the following:

> "The object of this organization shall be to cooperate with and extend the aims of the county medical society; to help educate public opinion relative to the advancement of health; to aid in securing better medical legislation; and to promote fellowship among the members of the Auxiliary."

The interpretation of these aims by county auxiliaries will vary each year, depending primarily upon the size of the membership; the quality of the leadership; and quite understandably, upon the attitudes and interests of the wives of doctors in each particular community.

The best illustration of the importance of balance in using these objectives for guidance was the withdrawal several years ago of one of the islands of Hawaii from the medical auxiliary. This was before statehood. Many of you will recall assuming that the transportation problem was the reason. In order to have a meeting, executive board or general, members had to travel from various islands by boat, aquaplane, and presumably, out-rigger. The reason given for resignation was not transportation, however. The members had decided to continue as an organization for wives of doctors, their future purpose to be purely social. While this separate organization would fulfill the fourth objective, there could be, of course, no serious accomplishments.

Let us then examine the objectives singly. There is definite relationship, no one can deny, between the various objectives. It is precluded that we are cooperating with and extending the aims of our own county medical society when we individually or collectively participate in community services, when we are active in promoting our careers and recruitment programs, when we assume that our every act as wives of physicians can either improve or mar good public relations.

Next, we are expected to help educate public opinion relative to the advancement of health. This is accomplished every day by members who devote service to health chairmanships in organizations, and approved health drives. Most members feel a personal responsibility for health standards in their community. Our organization provides countless ways of furthering our contribution: Safety, Civil Defense, Community Service, Mental Health, and Rural Health, for example.

Our third objective is to aid in securing better medical legislation. It is to be hoped that every county president has been constantly aware this year of the pressing necessity of emphasizing this aim. In our own state of Oklahoma, tremendous gains have been made this past year. These gains must be followed with continuous interest, so that performance will not lag. Nationally, we are forced to re-word this aim: our main concern is in suppressing what the federal government considers to be better medical legislation. Although our State Legislative Chairman, Mrs. Clinton Gallaher, can constantly remind us of the importance of group and personal contact, Maudie is not a Saint Joan who will lead us victoriously against the encroaching enemy. Each member, under the guidance of her county auxiliary, must be personally prepared and in condition for duty.

The last aim of our auxiliary, to promote fellowship among the members of the auxiliary, should be the simplest objective of all. Unfortunately, this is not always so. Much can be accomplished by friendly, intelligent, interested women; our potential is unlimited. This objective, together with its fulfillment, is clearly the denouement of our aims. Without this fellowship and understanding, the three other objectives are almost impossible to achieve. □

OSMA JOURNAL / *the last word*

The AMA reports that many county medical societies over the nation are implementing its new public service advertising campaign, a two-pronged program designed to take medicine's story of the public and improve the relationship between county medical societies and local newspapers. The first six ads of the advertising series—covering "selection of a physician," "grievance committees," "doctor-patient relationship," "immunization," "physicians' charity," and "medical care costs"—were sent to county societies on January 29th. Preceding the AMA mailing, the OSMA's Council on Public Policy endorsed the project and urged county presidents to ask their memberships for the financial support to purchase advertising space in local newspapers.

Under Oklahoma's new Medical Examiners Act, there are to be physicians appointed as County Medical Examiners in each county of the state. These physicians will investigate unexplained deaths in cooperation with law enforcement officials, and report their findings to the State Medical Examiner, W. Floyd Keller, M.D., Pasteur Building, Oklahoma City. Doctor Keller has appointed examiners in all counties but Bryan, Creek, Grady, Grant, Latimer, Lincoln and Love counties.

The U.S. Public Health Service's Medical Self-Help Training Course is now being tested in Oklahoma County, in cooperation with the county medical society. Designed to prepare the civilian population to care for its health care needs following a nuclear attack or similar national emergency, the program will soon be available to all counties of the state, upon application by the county medical societies. Approved by the AMA and the OSMA Disaster Medical Care Committees.

Brigadier General James G. Moore (USAF-Ret.), former Air Defense Command Surgeon, is now Director of Medical Education, St. John's Hospital, Tulsa.

Use of "Milnot" for infant feeding has resulted in some cases of malnutrition and death, according to the Food and Drug Administration. The American Academy of Pediatrics agrees that it is unsafe, unless a 13 oz. can is diluted with 10 oz. of water and 1 to 1½ oz. of carbohydrate is added. Even so, it is pointed out, dehydration may occur during episodes of fever or elevated environmental temperature. "Milnot" is manufactured in Oklahoma, Missouri and Illinois. It is prohibited from interstate commerce.

A Public Opinion Survey of the American Academy of General Practice, conducted by an independent research organization, disproves some "popular" medical mythology . . . 75 per cent of Americans are well satisfied with the quality of medical care . . . 54 per cent had no complaints at all about medical treatment . . . only 18 per cent thought medical care too expensive . . . more than 80 per cent favored private-financed over tax-financed care . . . 63 per cent believed physician's main satisfaction is "curing or helping people," while only 19 per cent thought it to be "financial gains."

House of Delegates will meet May 5th. Resolutions must be received by the OSMA Executive Office by April 5th. Delegates from sponsoring county society should be prepared to speak for the resolution(s) at reference committee hearings.

MEETINGS

March 20	OSMA PG Course ("The Colon") Valley View Hospital, Ada
March 27	OSMA PG Course ("The Colon") Western Hills Lodge, Sequoyah State Park (Wagoner)
March 23-25	Society of Nuclear Medicine, Southwestern Chapter, Little Rock, Arkansas
May 5-7	OSMA Annual Meeting, Oklahoma City
June 24-28	AMA Annual Meeting, Chicago.

NEWSLETTER

OKLAHOMA STATE DEPARTMENT OF HEALTH

OKLAHOMA CITY, OKLAHOMA

March 1, 1962

PUBLIC HEALTH IS THE FAMILY PHYSICIAN'S BUSINESS

A good example of this is illustrated by the attack on the venereal disease problem which is again becoming of increasing significance as a health problem. The findings of a special Public Health Service Advisory Committee on venereal disease control points out these four disturbing items:

1. Evidence of a chain reaction in the spread of syphilis infection, especially among teenagers;
2. Evidence that the actual number of cases occurring, far outnumber the cases reported;
3. Evidence that effective techniques of control and therapy to stop the spread of syphilis are available but not applied widely enough;
4. Evidence that unless a vigorous, stepped-up program is inaugurated now, the increased spread of syphilis currently being observed may be accelerated.

The Special Public Health Committee believes that the success and the control of syphilis will depend a great deal upon the private physicians participating in the program. In their report to the Surgeon General, they state:

> That an intensive effort be inaugurated to enlist the private physician and his professional societies and associations in the control effort, providing for at least two visits per year by a qualified health worker to 100,000 general practitioners in the country and one visit a year to the remaining 130,000 physicians. The primary purpose of these visits will be to show each physician how the program works to eliminate syphilis and to enlist his cooperation in reporting cases and permitting his patients to be interviewed.

In Oklahoma, the private physician and the Health Department have already established a good record of working together. The Health Department reports show that the Venereal Disease Investigator--a skilled and well-trained specialist in finding new cases--has worked with several hundred physicians during the past year in finding the contacts of their patients. Excerpts of a letter from an Oklahoma physician verifies the good results when the family physician and the Health Department work together:

> It has been a pleasure to work with the Venereal Disease Investigator on eleven cases of syphilis in our county, several of which I treated in my clinic. I talked with the investigator regarding a V.D. clinic for possible contacts of these eleven persons. I wish to commend your department for having such a fine person on its staff. It has been a pleasure working with him.

The JOURNAL of the Oklahoma State Medical Association

APRIL 1962
Vol. 55/No. 4

EDITORIAL BOARD

BEN H. NICHOLSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

C. B. DAWSON, M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

CLINTON GALLAHER, M.D.
President

J. HOYLE CARLOCK, M.D.
President-Elect

PETER E. RUSSO, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DICK GRAHAM
Business Manager

DON BLAIR
Associate Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

The Role of Blue Cross in Financing Hospital Care of Older Persons . . . 109
The Medical Center Section . . . 110
President's Page . . . 111

scientific

Problems in the Diagnosis and Treatment of Hypothyroidism in Children, *Doman K. Keele, M.D.* . . . 112
Prostatic Surgery Mortality Related to Hemorrhage, *Donald W. Branham, M.D. and Ralph C. Emmott, M.D.* . . . 119
Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy, *Philip J. Maguire, M.D.* . . . 123
Hydrops of the Gallbladder in a Three-Year-Old Girl, *D. W. Bobek, M.D.* . . . 125
Heart Page, *Stephen W. Thompson, M.D.* . . . 128

medical center

Dean's Message . . . 129
Electrocardiographic Abnormalities in Congenital Heart Disease: QRS and T, *Thomas N. Lynn, M.D.* . . . 130
The Truth, *Leon C. Freed, M.D.* . . . 139
Faculty News . . . 141
Abstracts . . . 142

annual meeting

Officers and Trustees . . . 144
Committees . . . 145
Digest of Events . . . 146
Guest Speakers . . . 148
Program . . . 151
Exhibits . . . 155
Related Meetings . . . 156
Entertainment . . . 157
Business . . . 158
Delegates and Alternates . . . 159
Woman's Auxiliary . . . 171

departments

Miscellaneous Advertisements . . . xix
Index to Advertisers . . . xliv
Auxiliary . . . xlv
The Last Word . . . xlvi

COVER ART: William Mark Cason

after surgery: vitamins are therapy

Nutritional supplementation is basic to postoperative care. Therapeutic allowances of B and C vitamins help meet increased metabolic requirements and compensate for stress depletion. STRESSCAPS can set the patient on a more favorable course and contribute to full recovery. Packaged in decorative "reminder" jars of 30 and 100.

Each capsule contains:	
Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

STRESSCAPS®

Stress Formula Vitamins Lederle

The Role of Blue Cross in Financing Hospital Care of Older Persons

WALTER J. McNERNEY, President of the Blue Cross Association, has outlined the philosophy behind and the reasons for the role it is thought Blue Cross should have in financing hospital care for the aged. It is well to look at them, for both health services, hospital and medical, are up to their shoulders in efforts to solve this problem short of government administration, and it would appear that the Blue Plans offer the only real hope of accomplishing this. For lack of space only that part which seems most essential is included.

SUMMARY OF THE ROLE OF BLUE CROSS AND HOSPITALS

1. Blue Cross and hospitals, from their inception, have been dedicated to the principle that all persons needing and seeking care shall receive it regardless of their economic status.

2. Blue Cross was established to bring hospital care within financial reach of all income groups without differentiation by reason of financial status at the time service is rendered. A basic Blue Cross principle is *provision of needed hospital services* rather than dollar allowances toward the cost of services rendered.

3. Blue Cross has long given special attention to the problems of making prepayment arrangements accessible to the aged, even to the point of placing an increasing burden on other subscribers. However, in today's competitive market Blue Cross can no longer require the younger and more favorable risk groups to subsidize prepayment for the aged, particularly those who have not been members before retirement.

Regardless of the close working relationships with hospitals and rating devices to ease the pressure on rates for the aged, Blue Cross cannot assume the burden of making its benefits available to the unenrolled aged when a similar responsibility is not assumed by the private insurance companies.

4. Blue Cross recognizes that governmental financial assistance is needed if prepaid protection comparable in quality to that enjoyed during the working years of life is to be made accessible to many retired persons. The difficulty of prepayment agencies providing an adequate level of hospital benefits within the financial reach of the majority of retired persons has become evident.

5. Blue Cross and hospitals are in accord that the present Kerr-Mills program must be continued and strengthened. But they also agree that government assistance is needed beyond that presently provided under the Kerr-Mills amendment to assist those who cannot purchase adequate hospital and related benefits with their present incomes.

6. Legislation formulated to help the aged finance their health care should strengthen voluntary institutions so that these institutions may better serve the total community. The voluntary agencies' existing resources should be utilized to the maximum. Duplicate government machinery should not be set up. Any legislative provisions should be designed to help all aged who without aid lack effective purchasing power. Operations of programs should be at the local level. Benefits should be simply stated and specially designed to meet the needs of aged persons with flexibility for program improvement.

7. Blue Cross and hospitals are in agreement that with governmental financial assistance a national non-profit voluntary prepayment program, in cooperation with local prepayment Plans, can meet the problem of financing care rendered by hospitals and allied facilities to all older persons. Blue Cross has had more experience in coverage

of aged persons than any other voluntary organizations, singly or in combination. Its orientation is community-wide service for all persons. Blue Cross has excellent and ongoing relations with hospitals in all matters involved in the purchase of care and in the most economical use of the public's money. Blue Cross has effective working relations with government at all levels — Federal, State, and local. Because of its non-profit nature, its vast volume and accumulated experience, Blue Cross has the lowest overhead cost of any prepayment or insuring organizations in the United States.

8. Blue Cross and hospitals recognize that any program for financing health care of aged persons must take into account available health services, manpower, and facilities as well as the impact of new and more widely accessible benefits on the development of additional manpower, facilities and services.

9. To permit maximum economy of operation at the community level and to assure high quality of care, standards promulgated by government should be flexible and not overly detailed.

10. Agreement exists among administrators of Blue Cross and hospitals that the extent of governmental assistance given to the aged should be generally related to their income, which could be determined by a simple statement or declaration made by the aged in connection with reports for Federal income tax purposes or by some other simplified procedure for declaration of income. It is recognized that some aged will have incomes too low to permit them to contribute to the costs of their hospital benefits.

11. Blue Cross, in cooperation with hospitals, is prepared to offer a nationwide program for the aged with uniform benefits, rates, and administrative practices. The hospital and related benefits necessary to meet the most essential needs of the aged have been outlined. They involve a minimum of underwriting restrictions. They are consistent with the Blue Cross principle that need for services when ill is the governing consideration. Under this program, all covered persons would be essentially on parity in receiving benefits, regardless of whether their protection was financed in whole or in part from governmental funds.

12. There is widespread feeling that to meet the health care needs of the aged in an economical and effective manner, both government and voluntary institutions have their respective roles to play.

HISTORICAL BACKGROUND

Blue Cross Plans and hospitals have from their beginnings been dedicated to the principle that all persons needing and seeking care should receive it. They have long recognized that need can be met only if adequate financing mechanisms are accessible to the public. The health care financing problems of the aged currently the subject of great public interest, have for many years been a vital concern of the providers of services and of Blue Cross administrators.

Historically, hospitals have rendered care as needed, regardless of the patient's ability to pay. Hospitals have traditionally charged paying patients somewhat more than the

(Continued on Page 175)

The Medical Center Section

THIS SECTION of *The Journal* was conceived as a technique and a vehicle for obtaining good material for *The Journal* and at the same time affording the University Medical Center a means of making the readers of *The Journal* and the alumni of the school aware of the developments, of the progress and of the quality of the people who make up the faculty. While this concept has not changed, the Medical Center has entered on a plan to institute refinements in presentation and content which should meet both of the original objectives more effectively. The group selected for this purpose is composed of: James F. Hammarsten, M.D., Chairman,* David Mock, M.D., Vice-Chairman, Donald A. Albers, M.D., Arley T. Beaver, Ph.D., Mark Allen Everett, M.D., Francis J. Haddy, M.D., Thomas Lynn, M.D.,* Richard W. Payne, M.D.,* Harris D. Riley, Jr., M.D., S. Fulton Tompkins, M.D., and Rainey G. Williams, M.D. □

*Also on the Journal's Board of Contributing Editors.

The Soon to be Past President's Letter

The greatest honor that the House of Delegates can confer upon any person is election to the office of President of the Oklahoma State Medical Association. This I sincerely appreciate.

I appreciate more, however, the generosity and cooperation of several hundred members during the term of office. Approximately three hundred members have been asked to participate in various programs and the response has been wonderful. I will try to thank each one individually but this will require some time.

It has been a most satisfactory year. With practically no exceptions, the programs have been advanced and, in so far as possible, problems have been answered. I am sure that Doctor Carlock will be an excellent president, you couldn't have elected a better guy. I am more certain because I feel that you will cooperate with and help him as you have helped me.

The only regret that I have is the limitation of time and space which has prevented me from attending meetings and visiting with you more.

Very truly yours,

Clinton Gallaher M. D.
President

OSMA JOURNAL/scientific

Problems in the Diagnosis and Treatment of Hypothyroidism in Children

DOMAN K. KEELE, M.D.*

This stimulating and helpful article considers a problem which nags every physician who has children in his practice.

WITH THE POSSIBLE exception of diabetes mellitus, hypothyroidism is the most common primary endocrinopathy in childhood.[1] Because euthyroidism can be easily achieved when adequate replacement therapy has been instituted and maintained, it is important to recognize and treat the disease. In addition, most of the growth of the body and of the brain occurs during infancy and childhood, and, since thyroid homeostasis is important for this growth, normal intellectual and physical development may be retarded in deficiency states of thyroid production. This communication will be limited to a consideration of problems frequently encountered in the diagnosis and management of hypothyroidism in the infant and child. Five patients, all of whom were seen recently by the author at the University of Oklahoma Medical Center, will be presented to illustrate these problems.

PROBLEMS OF DIAGNOSIS

Two common problems will be considered under this category. These are: (1) the problem of early recognition of congenital hypothyroidism (cretinism) and, (2) the problem of differentiation of acquired hypothyroidism from childhood obesity. Two cases will be cited to illustrate the first and one to illustrate the second.

PROBLEM OF EARLY RECOGNITION OF CONGENITAL HYPOTHYROIDISM

Case #1. A five-month-old male infant was admitted to Children's Memorial Hospital on October 4, 1961. The chief complaint on admission was failure to grow. He was the product of an apparently normal pregnancy, and his birth weight was 9 lbs. 4½ oz. Weight gain from birth to five months of age had been only 2 lbs. 4 oz. There was a history of poor appetite, difficulty swallowing food, infrequent crying and excessive sleeping. He was unable to lift his head and had not rolled over. Constipation had been present since birth and he had experienced respiratory difficulty characterized by obstruction of the nasal passages and drainage of mucus from the nostrils. The parents also described a yellowish discoloration of the skin, dryness of the skin, puffiness around the face, and a hoarse cry. The hemoglobin was reported to be 6-7 gm. per cent five weeks prior to admission. At that time he was started on liver and iron. Follow-up hemoglobin a week prior to admission was 9 gm. per cent.

On admission to the hospital the patient was a poorly nourished infant, lying quietly in bed, but irritable when disturbed. The cry was coarse. The length was 22½ inches and the weight was 11 lbs. 10 oz. The pulse rate was 120 per minute; the respiratory rate 20 per minute; and the blood pressure 130 mm Hg. systolic in the arms and 150 mm Hg. systolic in the legs (flush method). The head circumference was 15.2 inches. The skin was dry, cool, slightly yellow in color and somewhat thickened. The face and head were puffy in appearance; the bridge of the nose was depressed; and the tongue was enlarged (figure 1). The hair was thin and coarse and there was a muco-purulent nasal discharge. No goiter was palpable. The abdomen was protuberant with a small umbilical hernia. With the exception of a weak hand grasp bilaterally, the reflexes were within normal limits. The infant appeared unaware of his surroundings.

*The Department of Pediatrics and The Children's Memorial Hospital, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

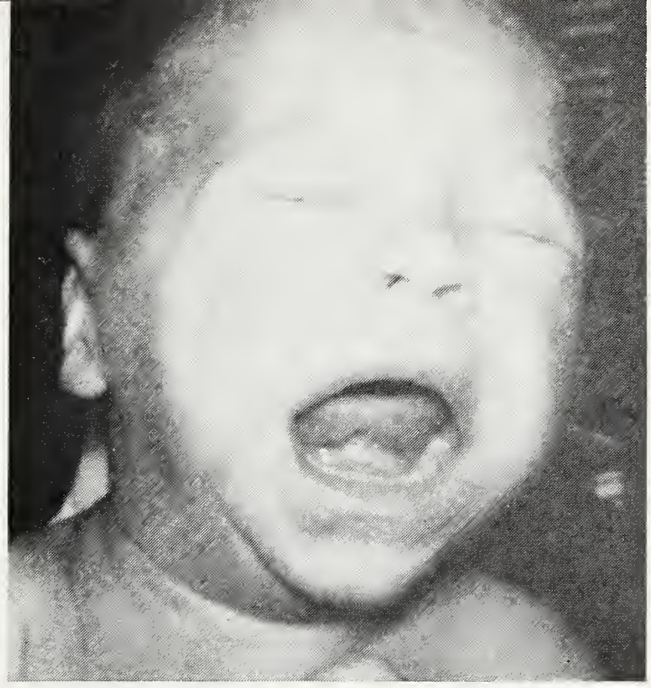


Figure 1. Case #1 before treatment.

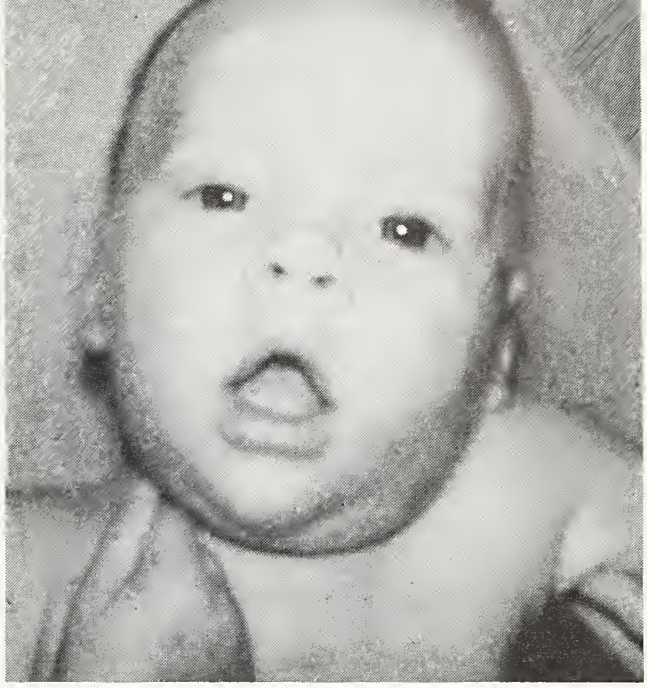


Figure 2. Case #1 two months after starting therapy.

The laboratory data was as follows: Hemoglobin 10.4 gm. per cent with a normal white count and differential; protein-bound iodine 2.9 μgm. per cent (normal 4-9 μgm. per cent); 24 hour radioactive iodine (I^{131}) uptake was 11.9 per cent (normal 15-35 per cent); and the alkaline phosphatase was 1.0 Bessey-Lowry Units (normal 4.8-6.7).

A diagnosis of cretinism was made, and the patient was started on ¼ grain of thyroid extract per day. Two weeks later the thyroid dosage was increased to ½ grain per day. Following discharge the infant was seen in the Outpatient Clinic three weeks after treatment had been instituted. He was improved at that time; the constipation was less; the skin was warm; and the skin color was normal. The mother reported that the infant was more alert and was awake for longer periods during the day. After six weeks of therapy, at which time he was on one grain of thyroid extract per day, his mother reported a markedly improved appetite which had been accompanied by a 2 lb. weight gain. He was now smiling, cooing, and beginning to notice his environment (figure 2).

Case #2. A nine-year-old Indian female was admitted to Children's Memorial Hospital on July 14, 1961, with the chief complaint of slow growth and retarded development. The birth weight was 5 lbs. 13 oz. There was a history of a large tongue, feeding difficulties and constipation since infancy. The patient was nursing from a bottle at the time of admission. The development had been slow since the first year of life and she slept much of the time. There was no family history of goiters or hypothyroidism.

On physical examination, the patient was a short, small Indian female with a broad flat nose, large nostrils, dull eyes, and a large tongue which protruded through the lips. The blood pressure was 90/60; the pulse rate was 74 per minute; and the respiratory rate was 14 per minute. The weight was 23 lbs. 14 oz.; the height was 31½ inches; and the head was 18.8 inches in diameter. Even though her chronologic age was nine years, her general appearance, reaction pattern and body measurements were that of an 18 month old child. The skin was dry, thick, and coarse. The abdomen was protuberant, and there was a small umbilical hernia. The reflexes were hyperactive and there was a slow relaxation time. She could say no words and it was possible for her to stand only with support. She obviously was grossly mentally retarded.

The hemoglobin was 8 gm. per cent; the cholesterol was 283 mg. per cent; the protein-bound iodine was 2.2 μgm. per cent; and the radioactive iodine (I^{131}) uptake was 8.6 per cent. Roentgenographic examination revealed epiphyseal dysgenesis and a bone age of six months.

The diagnosis of cretinism was made and ½ grain of thyroid extract daily was started. The thyroid extract was increased by ½ grain every two weeks, until a maximum of two grains daily was reached. She was last seen in the clinic two months after the institution of therapy. The skin was warm; she had lost the myxedematous appearance; and she was less constipated; however, the mother reported that the child was irritable and cried frequently. Four months after onset of therapy the mother reported that she was walking about the house and playing.

These two case histories include many of the clinical and laboratory findings typical of congenital hypothyroidism. In the first case hypothyroidism was recognized and therapy instituted at five months of age, by which time the classical features of congenital hypothyroidism are usually evident. In the second case there was marked mental and physical retardation due to hypothyroidism of long duration in an untreated patient with the classical findings of congenital hypothyroidism.

Much controversy has arisen concerning the effect of adequate thyroid therapy in the prevention of mental retardation and neurologic sequelae in congenital hypothyroidism. Some authors have stated that the

athyrotic cretin is born with brain damage, hypothyroidism having occurred *in utero*. In a few instances congenital hypothyroidism has been discovered at birth and has even been suspected prenatally by the demonstration of delayed epiphyseal ossification. Enamel hypoplasia, a dental defect occurring during the embryonic period, has also been demonstrated in 80 per cent of patients with cretinism.[2] Irreversible brain damage has also been produced in animals by deficiency of thyroid in the mother during pregnancy and by a deficiency of thyroid hormone in the early neonatal period.

In 1957, Smith, et al.,[3] reviewed 128 cases of hypothyroidism in infants and children, evaluating the mental attainments and neurologic sequelae of these children. Ten of 22 infants with complete absence of thyroid function, who were treated adequately before six months of age, and 12 of 25 patients treated adequately before 12 months of age, obtained an intelligence quotient (IQ) of more than 90. None of 50 patients who were inadequately treated, or who were treated after 12 months of age, attained this IQ. These authors also found that only four of the 22 patients treated adequately within the first six months of life developed neurologic sequelae. When treatment was begun after six months of age neurologic sequelae occurred in 22 of 57 patients. The neurologic sequelae found were spasticity, tremors, and hyperactive deep tendon reflexes. From this data Smith, et al.,[3] concluded that early and adequate treatment of hypothyroidism is essential for maximum intellectual development and for reducing the likelihood of neurologic sequelae. They also concluded from their study that early adequate therapy does not assure normal mentality in all patients, brain damage having apparently occurred prior to the institution of medication.

Andersen[2] has also stated from a study of 150 cases, that the best results in intellectual development were achieved by "vigorous" treatment started within the first three months of life. Whether or not institution of adequate therapy in the immediate newborn period will further improve the results of intellectual development has not, as yet, been determined. Since about three-eighths of the postnatal brain growth occurs in the first six months of life, it seemed logical to conclude that every effort should be made to recognize cretinism early and to institute adequate therapy as soon as possible after birth.

In at least three clinical situations it is theoretically possible to actually prevent brain damage from occurring *in utero*. First, it has recently been demonstrated [10, 11] that cretinism is associated with auto-immune phenomena in certain pregnant mothers who have circulating antithyroid antibodies and in their infants who also have circulating antithyroid antibodies. It was suggested that these antibodies damaged the thyroid gland of the infants resulting in cretinism. Mothers who are likely to have circulating antithyroid antibodies are those with nontoxic enlargement of the thyroid gland. Chronic thyroiditis is also commonly associated with circulating antithryoid antibodies.[12] Although not all mothers with circulating antithyroid antibodies give birth to cretins,[10] it is theoretically possible that brain damage in their infants can be prevented in a few cases if they are given thyroid hormone during pregnancy. Thyroid hormone crosses the placenta slowly; however, it is possible for enough to get to the infant to preserve the intellectual development.

The second situation in which the mother should be given physiologic doses of thyroid during pregnancy is in hypothyroidism. Infants of hypothyroid mothers will usually be protected by their own endogenous production of thyroid hormone, but by chance there may be occasions when the infant will be athyrotic and cretinism would occur *in utero*. The third situation would be where the mother has previously given birth to a cretin. Rarely does athyrotic cretinism occur in siblings; however, cretinism does occur in siblings born of mothers with anti-

---

Doman Keele, M.D., a 1953 graduate of the University of Texas Southwestern Medical School, limits his practice to pediatric endocrinology. He is Associate Professor of Pediatrics at the University of Oklahoma School of Medicine.

Doctor Keele is a member of the Southern Society for Pediatric Research.

thyroid antibodies, as described above, and in siblings of genetic goitrous cretins. It would probably be wise to administer physiologic dosages of thyroid hormone during pregnancy to these mothers and thus remove the chance of having infants born who may have mental retardation.

If the pregnant mothers in these three situations do not receive thyroid hormone during pregnancy, the physician caring for their infants should at least be alerted to the increased possibilities of cretinism being present at birth and proper studies instituted.

Cretinism may be manifest in the early neonatal period by prolongation of the physiologic jaundice of the newborn infant. Other signs and symptoms of cretinism frequently become manifest at three or four weeks of life, at which time the maternally acquired thyroid hormone has disappeared from the infant's body. The infant becomes lethargic, constipated, and there is a decrease in linear growth. Infants manifesting one or more of these symptoms should be carefully evaluated to rule out cretinism.

Lowry, et al.,[4] analyzed the signs and symptoms of 49 patients with congenital hypothyroidism. Lethargy occurred in 96 per cent of the infants. The parents frequently gave histories that these children slept more than usual, seldom cried, and failed to notice things. Constipation was a symptom in 92 per cent of the cretins. In a control group of infants the history of constipation was present in only two per cent. Eighty-three per cent of the infants with cretinism had feeding difficulties and failure to thrive. The infants nursed slowly, requiring long periods for a single feeding despite persistent urgings on the part of the mother. Respiratory symptoms were present in 76 per cent of the infants with cretinism. The respiratory symptoms consisted of rhinorrhea, stuffy nose, and difficulty of breathing during feedings.

Growth failure was present in all infants with congenital hypothyroidism. In their study group, Lowry, et al., found 100 per cent of the patients had a height below the tenth percentile and 60 per cent below the third percentile. Seventy per cent of the infants had umbilical hernias, 50 per cent had myxedema, and 30 per cent had macroglossia. A yellowish discoloration due to carotenemia was not an uncommon finding. Hypothermia and hoarseness of the cry were frequent findings.

Early signs and symptoms are equivocal; the classical signs and symptoms of cretinism are manifest in infants only after hypothyroidism has been present for a three to five month period, during which time there has probably been progression of irreversible brain damage. It is important that infants manifesting any of these symptoms be adequately evaluated in order that an early diagnosis be made and adequate treatment instituted.

Laboratory determinations may facilitate the early diagnosis of cretinism when signs and symptoms of the disease are equivocal. The butenol extractable iodine (BEI) determination is probably the most valuable single diagnostic determination. The lower limits of normal for the BEI determination in the first week of life is 7.0 μgm. per cent and 4.6 μgm per cent after the first week of life.[5] The protein-bound iodine (PBI) and radioactive iodine (I^{131}) uptake test may be influenced by exogenous iodine, and the I^{131} uptake is frequently difficult to perform in small children. Serum cholesterol determinations are unreliable as an aid to diagnosis of cretinism in infants. Serum carotene concentrations are elevated and serum alkaline phosphatase concentrations are low. Bone age is also retarded by roentgenographic studies; stippled epiphyses are said to be diagnostic.[9] If the diagnosis of cretinism remains equivocal after appropriate evaluations and diagnostic tests have been accomplished, replacement therapy should be instituted and maintained during the first year of life. After this period of time the therapy may be discontinued, and studies performed without a threat of growth retardation or neurologic complications.

THE PROBLEM OF DIFFERENTIATION OF ACQUIRED HYPOTHYROIDISM FROM OBESITY IN CHILDREN

Hypothyroidism is a very uncommon cause of obesity, nevertheless the physician frequently sees cases of obesity where differentiation from hypothyroidism presents a problem. The following case illustrates this point.

Case #3. This 11-year-old white female was seen in the Pediatric Clinic of the Children's Memorial Hos-

pital on September 26, 1961. The chief complaint was excessive weight. At seven years of age she had had a marked increase in weight gain although she had always been larger than other children of her own age. Between 10 and 11 years of age she had gained 16 lbs. In contrast to her weight gain, however, the mother noted that the patient had not grown as much as other girls her age. Dietary history revealed that the patient ate an amount equivalent to those of the other girls her age. She did not engage in physical activities. Her intellectual activities were normal and she was a straight A student in the fifth grade. She complained of intolerance to cold, and had a history of chronic constipation.

Her height was 52 inches, which was below the tenth percentile for her age. Her weight was 141 lbs., which was above the 97th percentile. Pulse rate was 92 per minute; respiration 20 per minute; blood pressure 102/90 mm Hg. She was a mentally alert and cooperative, but an extremely obese, female. She was pale and the skin was dry and cool. Her hair was coarse. The thyroid gland was not palpable. The external genitalia were infantile. The deep tendon reflexes were hyperactive with a prolongation of the relaxation time.

Pertinent laboratory data included a 24 hour radioactive iodine uptake of 6.3 per cent (normal 15-35 per cent). After thyroid stimulating hormone six units daily for three days the I^{131} uptake was nine per cent, this was considered to be an abnormally low response. Serum cholesterol was 445 mg. per cent; PBI was 8.7 μgm. per cent; and the bone age was five years.

The patient was considered to have exogenous obesity and acquired hypothyroidism. She was started on ½ grain of thyroid extract daily, this dosage to be increased by ½ grain every two weeks until normal serum hormonal levels had been achieved and the patient had clinical improvement.

This patient was clearly obese. She had a few signs pointing to the possibility of hypothyroidism, the most striking being her retardation of linear growth. Additional findings in this patient were those of lack of the usual flushed, moist, warm appearance of the obese patient.

In childhood obesity the height age is equal to or greater than the mean. Hypothyroidism of any duration is always associated with growth retardation; therefore, in any obese child the linear measurement becomes an important determination. In cases where the linear measurement is below the mean one should always be alerted to the possibility of hypothyroidism. In addition to this important determination, a careful examination of the skin is also helpful. In obesity the skin is usually flushed, moist, warm, and has a stuffed appearance. In contrast, in hypothyroidism the skin is usually pale, dry, cool and flabby. When these findings appear in a patient with obesity and retardation of growth, one should perform the necessary laboratory determinations to rule out hypothyroidism.

THE PROBLEM OF ADEQUATE TREATMENT

This problem will be illustrated by two cases.

Case #4. An 18-year-old white male was first seen at the University of Oklahoma Medical Center on October 20, 1960. The chief complaint at that time was "poor physical condition." The patient was the product of a normal gestation; the birth weight was eight lbs. There was no family history of thyroid difficulty. As an infant the patient had frequent upper respiratory infections, constipation, and failure to gain weight from birth. At the age of 13 months his weight was 13 lbs., he had not sat alone, and there had been no tooth eruptions. A diagnosis of cretinism was made at that time and the patient was given ¼ grain of thyroid extract daily. At six years of age the total daily dosage was one grain of thyroid extract daily but this was not taken regularly. Following institution of therapy at 13 months of age, the patient crawled at two years of age, walked at two and one-half years of age, and talked at three years of age. He was enrolled in school at six years of age but there was a history of poor academic accomplishment.

At 18 years of age the blood pressure was 124/80 mm Hg., pulse rate was 88 per minute and the respiratory rate was 15 per minute. His height was five feet ¾ inches and his weight was 157 lbs. He appeared mentally dull and had a rather coarse, stuttering, slurred speech. The skin was dry, cool, and thick to touch, and he had a pallid appearance. The thyroid gland was not enlarged. The genitalia were those of an adult male, the pubic hair was normal in amount while the body hair was somewhat scant. The extremities were short. The neurologic examination was within normal limits except that the reflexes were brisk with a slow relaxation time.

Pertinent laboratory data: protein-bound iodine 3.0 μgm. per cent (normal being 4-8 μgm. per cent); total cholesterol 243 mg. per cent with 66 per cent esters; 24 hour radioactive iodine uptake 4.4 per cent (normal being 15-35 per cent); and psychological testing showed him to have an IQ of 40.

The diagnosis of congenital hypothyroidism was established, and the patient was given one grain of thyroid extract per day. This dosage was increased by one grain per month to a total dosage of three grains per day. The total dosage at the present time is three grains per day. Over the past 12 months there has been an increase in his over-all activity, loss of his myxedematous appearance, and his color at the present time is normal. The skin is warm and moist, and the coarseness of the hair and dryness of the skin have decreased. His over-all mental ability has not improved. The patient was given ten units of thyroid-

stimulating hormone on April 24, 25, and 26, 1961. His 24 hour I^{131} uptake remained low and was interpreted as a lack of thyroid response.

Case #5. An 11-year-old white female was brought to the Children's Memorial Hospital with a chief complaint of slow growth. The patient was a product of a normal pregnancy and delivery, and her birth weight was seven lbs. The patient's growth and development were considered normal until approximately three years of age. At that time the parents became aware that the child was short. At six years of age the family states that she was the smallest girl in her classroom at school. At seven years of age diagnostic studies were performed for failure to grow, and the parents were told that their child was hypothyroid. She was given ¾ grain of thyroid extract per day. This was continued until six weeks prior to admission to this hospital. On admission to this hospital at 11 years of age, the patient was in the fifth grade and making As and Bs in all of her subjects. Her appetite had always been good and recently she had been overweight. Other complaints included dryness of the skin; coarse, dry and brittle hair; and frequent constipation.

On physical examination the patient was alert, cooperative, and appeared to be mentally normal. Her weight was 68 lbs.; height, 46 inches; temperature 98° F. rectally; respiratory rate 18 per minute; pulse rate 68 per minute; and the blood pressure was 95/65 mm Hg. She was a short, moderately obese female with a myxedematous appearance. Her skin was dry, thick, pale and cool. The abdomen appeared normal except for a thickened abdominal wall. Neurologic examination was considered normal except for a slow relaxation time of the deep tendon reflexes.

Pertinent laboratory data revealed an alkaline phosphatase of 3.25 Bessey-Lowry Units: I^{131} uptake 5.9 per cent; serum cholesterol 627 mg. per cent; protein-bound iodine 1.7 μgm. per cent; and a radiological bone age of five years.

Based on the history and laboratory findings, this patient was considered to have acquired hypothyroidism. Thyroid extract, ½ grain daily, was instituted with instructions to increase the oral dosage by ½ grain every two weeks. Six weeks after discharge the patient was seen in the Pediatric Metabolic Clinic for follow-up. At this time the dosage was 1½ grains per day. Her skin was much improved; her weight was down from 67 lbs. to 64 lbs.; and her height was the same. The family reported that she was more alert and active and her grades had improved in school. Constipation had also disappeared. Six months later she was taking 2½ grains of thyroid extract per day which was considered to be her physiologic dosage. She had gained from 64 lbs. to 69 lbs. and had grown five inches in height. At that time she was considered to be euthyroid clinically.

In case #4 the diagnosis of hypothyroidism was made at 13 months of age. Although therapy was started at that age it had apparently been inadequate, because on admission he showed evidences of marked mental and physical retardation. Adequate replacement therapy has returned him to a clinically euthyroid state, without any improvement in intellectual development, however. In case #5 acquired hypothyroidism was first recognized at the age of seven years, but replacement thyroid therapy had apparently been inadequate as the patient had not achieved maximum growth. After the institution of hormone therapy she showed marked improvement in growth, mental alertness and was considered to be normal when last seen.

In addition to the apparent effectiveness of adequate hormonal thyroid replacement therapy in the prevention of mental retardation and neurologic sequelae, replacement thyroid hormone therapy is also essential for adequate growth and physical health. The hypothyroid patient who has received adequate treatment and is euthyroid can be considered physically normal. The important problem, then, is that of determining adequate replacement dosages for the specific patient. There are three major guides to be used in determining adequacy of dosage in hypothyroid children. These include the developmental bone age, the serum hormonal iodine levels, and repeated and sequential growth and developmental evaluations. The serum hormonal iodine levels have been shown to be reliable guides for determining correct replacement dosages. These include the protein-bound iodine (PBI) and butanol-extractable iodine (BEI) levels. With thyroid extract as the therapeutic agent, the PBI ranges between 4-5.8 μgm. per cent in the euthyroid stage and with Sodium-1-Thyroxin the euthyroid level of PBI ranges between 6-12 μgm. per cent. The BEI should be maintained between 5-7 μgm. per cent.

Wilkins[8] has emphasized the importance of skeletal maturation as a guide to therapy in hypothyroidism. Within two to four months of therapy new centers of ossification will appear and the bone age should approach normal within one to two years after adequate therapy has been instituted, except in patients with severe retardation where it may take longer for the bone age to become normal. Serial determination of the patients growth and development should also be made as an index to adequate replacement therapy in hypothyroidism. Within two to three months these children should have a rapid acceleration of growth and will achieve

normal growth on adequate replacement treatment. These patients should also have a disappearance of clinical myxedema and become more alert and active. There should be a marked improvement in peripheral circulation with the loss of pallor. The skin should become pink and warm and have perspiration. Constipation should also disappear.

If these guides are used it will be found that the dosage of thyroid hormone required to achieve euthyroidism in the hypothyroid infant and child is not very different from that of the adult. It is unlikely that a hypothyroid infant will achieve euthyroidism on a dosage of less than one grain of thyroid extract per day. Older children will require more, the dosage ranging from one and one-half to four grains of thyroid extract per day. Because of this the thyroid dosage should be individualized and adjusted for the individual, utilizing the above guides.

In cases of severe myxedema the initial thyroid dosage should be small and the total dosage gradually increased as necessary in order to prevent heart failure. It has been recommended that the average myxedematous child be placed on ½ grain of thyroid extract* daily for two weeks with an increased dose of ½ grain every two weeks until the final maintenance dosage is determined. Wilkins[9] recommends that a smaller dose (¼ grain/day) be the starting dose in myxedematous infants and that the dosage be increased by a similar amount every ten days to two weeks; others[6, 7] believe that a faster schedule should be used. Patients should be periodically observed for signs of heart failure. Frequently the cretin will manifest irritability and sleeplessness transiently during the first weeks of therapy. It is important to advise the mother not to stop treatment during this initial period because of these symptoms. In general, the drug should be continued unless there are clinical signs of toxicity. It is also important to emphasize to the parents that the child must stay on this drug consistently for the rest of its life if euthyroidism is to be maintained.

*Sodium-1-Thyroxin is an equally effective agent for replacement therapy; 0.1 mg. is approximately equivalent to 90 mg. (1½ grains) of thyroid extract.

Smith, et al.,[3] have shown that in acquired states of hypothyroidism with the onset after two years of age, there is no effect on the mental development. It therefore can be anticipated that patients acquiring hypothyroidism after early infancy can be maintained on adequate replacement therapy and develop normally both mentally and physically.

SUMMARY AND CONCLUSIONS

1. The importance of the early recognition of congenital hypothyroidism has been emphasized.
2. Early and adequate thyroid hormone replacement therapy is necessary for the attainment of maximal intellectual development in congenital hypothyroidism.
3. The differential diagnosis of hypothyroidism and obesity is discussed.
4. Adequate thyroid hormonal replacement therapy is necessary for the attainment of normal physical growth and health in the hypothyroid infant and child.
5. The thyroid hormonal replacement dosage may vary from 1 to 4 grains of thyroid extract daily in the hypothyroid infant or child and must be individualized for each patient. Guides for the determination of adequate dosage are serial serum hormonal iodine determinations, developmental bone age, and sequential determination of growth and development. □

BIBLIOGRAPHY

1. Wilkins, L.: The Diagnosis and Treatment of Endocrine Disorders in Childhood and Adolescence. Second Edition, page 7, Charles C. Thomas, Springfield, Illinois, 1957.
2. Andersen, H. S.: Studies of Hypothyroidism in Children. Acta Paediatrica 50: Suppl. 125, 1961.
3. Smith, D. W., R. M. Blizzard, and L. Wilkins: The Mental Prognosis in Hypothyroidism of Infancy and Childhood. Pediatrics 19: 1011-1022, 1957.
4. Lowrey, G. H., R. H. Aster, E. A. Carr, G. Ramon, W. H. Bierwalters, and N. R. Spafford: Early Diagnostic Criteria of Congenital Hypothyroidism. A.M.A. Dis. Child. 96: 131-143, 1958.
5. Fisher, D. A. and D. E. Pickering: Infantile Hypothyroidism. Pediatric Clinics of North America, pages 863-872, November, 1957.
6. Cook, R. E. and E. B. Man: Management of Hypothyroidism in Infancy and Childhood. Pediatrics 17: 617-631, 1956.
7. Fisher, D. A., D. G. Hammond, and D. E. Pickering: The Hypothyroid Infant and Child. A.M.A. J. Dis. Child. 90: 6-21, 1955.
8. Wilkins, L.: The Rate of Growth, Osseous Development, and Mental Development in Cretins as a Guide to Thyroid Treatment. J. Ped. 12: 429-438, 1938.
9. Wilkins, L.: The Diagnosis and Treatment of Endocrine Disease in Childhood and Adolescence. Second Edition, pages 88-134, Charles C. Thomas, Springfield, Illinois, 1957.
10. Blizzard, R. M., R. W. Chandler, B. H. Landing, M. D. Pettit, and C. D. West: Maternal Autoimmunization to Thyroid as a Possible Cause of Athyrotic Cretinism. New England J. of Med. 263: 327-336, 1960.
11. Sutherland, J. M., V. M. Esselborn, R. L. Burket, L. B. Spillman, and J. T. Benson. Familial Nongoitrous Cretinism Apparently Due to Maternal Antithyroid Antibody. New England J. Med. 263: 336-341, 1960.
12. Blizzard, R. M., G. T. Hamri, T. G. Spillman, and W. E. Wheeler: Thyroglobulin Antibodies in Multiple Thyroid Diseases. New England J. Med. 260: 112-116, 1959.

800 N.E. 13th, Oklahoma City, Oklahoma

Prostatic Surgery Mortality Related to Hemorrhage

DONALD W. BRANHAM, M.D.*
RALPH C. EMMOTT, M.D.

Blood loss as an immediate cause of death following prostatic surgery is unusual, but insidious loss may contribute to late complications, such as pulmonary embolism or coronary occlusion.

THREE DECADES AGO prostatic surgery in most medical centers carried a mortality rate of around 20 per cent. As recently as 1947 Rees[1] in 589 cases reported death in 15 per cent from sepsis, uremia and cardiovascular complications. Today the operative mortality in most centers ranges around one per cent. A recent study by Stearns[2] on 500 consecutive retropubic prostatectomies reported an operative mortality of 0.6 per cent.

In other centers somewhat higher death rates have been reported. Donnin[3] of Australia, in 1960 reported 2.7 per cent mortality in 262 cases, while Salvaris[4] of Great Britain reported 1200 cases of retropubic prostatectomy with a mortality rate of 4.5 per cent.

There are several factors which have contributed to this reduction. Improved preoperative and post-operative care, better selection of operative procedures for the pathologic condition present, judicious use of antibacterial agents, administration of blood and a better understanding of fluid and electrolyte balance. Likewise one must not discount the improved instruments available and the fact that modern urologists are better trained surgeons than those of the past.

During a 34 month period, ending February 1, 1961, 640 operative procedures for prostatic obstruction were done at the University Medical Center in Oklahoma City. Most of these operations were done for benign obstructions. They are consecutive cases from the combined facilities of the University Hospitals and the Veterans Administration Hospital. With few exceptions the operations were performed by the resident staff under supervision by the faculty.

There were 423 transurethral resections and 217 open operations. Of the open operations approximately 70 patients each had suprapubic, retropubic or perineal procedures. The average post-operative stay was eight days at the University Hospitals and ten days at the Veterans Hospital.

There were seven operative deaths, a mortality rate of 1.1 per cent.

One patient died following retropubic removal of a benign adenoma, a mortality rate of 0.46 per cent for open procedures. Death occurred on the third post-operative day from Gram negative septicemia associated with severe secondary hemorrhage.

Six patients died following transurethral prostatic resection, a mortality rate of 1.40 per cent. One patient died on the fifth post-operative day from anuria and renal tubular necrosis following rupture of the bladder

*Deceased

and severe hemorrhage. A second patient died on the third post-operative day from myocardial infarction. The remaining four died from irreversible surgical shock due to post-operative blood loss.

Salvaris[4] observed that 25 per cent of those patients who bleed profusely after prostatic operations die from the effects of blood loss and many of those who survive show evidence of circulatory disturbances. Similar findings were noted in a study by Thrasher and Beglin.[5] They reported 38 deaths in a series of 2000 prostatectomies, a mortality rate of 1.9 per cent. Of these 38 deaths only four patients died directly from post-operative hemorrhage. There were 22 who died from cardiovascular complications and 12 who died from frank cardiac failure. Six patients died from pulmonary embolism while cerebrovascular accidents accounted for death in four patients.

One may suspect that excessive blood loss was the major cause of circulatory disturbances which led to the death of 22 of these patients. These data tend to confirm our feeling that blood loss at the time of operation, and later, may produce hemodynamic changes in an already unstable circulatory system which results in immediate or delayed cardiovascular complications.

One patient may tolerate massive bleeding without difficulty but another may become physiologically embarrassed with relatively little blood loss. Older, arteriosclerotic individuals are quite unpredictable in this respect. Goodyear and Beard[6] in 1949 measured the blood loss in 100 consecutive prostatectomies and reported the following average blood loss from each operation:

Transurethral prostatic resection	260 ccs.
Suprapubic prostatectomy	368 ccs.
Retropubic prostatectomy	630 ccs.
Subtotal perineal prostatectomy	458 ccs.
Radical perineal prostatectomy	918 ccs.

Nesbit and Conger[7] in 1941 measured blood loss from transurethral prostatic resections and observed an average of 450 ccs., with a maximum of 1,000 ccs. including blood loss from the beginning of the operation until the urine was free of blood a few days later. Other investigators have corroborated these findings and it is well documented that the average blood loss during open prostatectomy and for seven days after operation often amounts to one liter.

Realizing the importance of blood loss, not only as a cause of mortality but also morbidity, we have endeavored to minimize blood loss at the time of operation by meticulous fulguration or ligation of bleeders and replace most of blood before signs of circulatory embarrassment develop. We begin administration of whole blood when, in our judgment, the loss during operation approximates 500 ccs. This prompt replacement of blood volume may account for the fact that cardiovascular complications in our series have been less than that reported in several others.

Despite careful hemostasis every urologist at times must deal with excessive hemorrhage post-operatively. Our experience with methods to control post-operative hemorrhage may be listed as follows:

MECHANICAL MEANS

A. Traction on the Foley catheter
   An over-distended 30 cc. Foley bag catheter is pulled tightly against the vesical neck and traction maintained by rubber bands taped to the thigh.

This is a rather effective method to control bleeding in the immediate post-operative period. It is especially valuable when bleeding originates from venous sinuses opened by transurethral resection. Arterial bleeding is less well controlled by this method. The danger of this procedure is that prolonged pressure can produce sphincter damage with subsequent incontinence. We believe, however, that short periods of traction, up to one hour, are not harmful. Traction is best applied in the immediate post-operative period because it is quite painful after the patient has recovered from his anesthetic. Another source of pressure is by gauze sponges tied around the catheter near the glans while the catheter is under traction. This works well for hemostasis

---

A graduate of the University of Western Ontario Faculty of Medicine in 1945, Ralph C. Emmott, M.D., limits his practice to his specialty, urology. He is an Instructor in Urology at the University of Oklahoma School of Medicine.

but one patient developed gangrene of the glans and lost part of that organ from slough. In this instance the error was in leaving traction in place too long (overnight).

B. *Double balloon catheter*

Our experience with this device is limited but we doubt whether it is of any real value.

C. *Two-way catheter with continuous saline or citrate drip*

This has been effective when bleeding is moderate and clotting is a problem. The disadvantage is that it requires careful and experienced nursing care to maintain constant drainage. Clot occlusion of the outflow lumen occurs readily.

D. *Endoscopic fulguration of bleeding points*

This procedure is often employed to control bleeding after transurethral prostatic resection when more conservative measures fail and has been successful in about 25 per cent of our cases. Occasionally bleeding ceases spontaneously when blood clots are evacuated from the bladder. This probably results from decompression of the prostatic fossa which allows bleeding vessels to retract. We have never attempted to control hemorrhage by endoscopic means after open operation.

E. *Suprapubic cystostomy with packing of the prostatic fossa*

This method to control bleeding is probably the most effective. When suprapubic cystostomy is done an effort should be made to ligate bleeding vessels individually. This is not always possible and the fossa is then packed with gauze. One end of the pack is brought out through the skin wound. A suprapubic catheter is inserted through a stab-wound in the dome of the bladder. Some authors recommend fixation of the gauze pack in the prostatic fossa by catgut sutures to produce better hemostasis. We have found no reason to adopt this modification because the free pack has proved quite successful in our hands. At the end of 72 hours the pack is removed and a urethral catheter passed into the bladder. If the catheter drains well, the suprapubic catheter is removed. The wound usually heals by first intention.

F. *Ligation of hypogastric arteries*

This means of controlling profuse pelvic bleeding has been used many years by gynecologists. Its first use for prostatic hemorrhage was described by Willmer and Hamm[8] in 1956. We have performed hypogastric ligations twice when life-endangering bleeding occurred and other methods failed. One followed transurethral prostatic resection in which cystostomy and packing were ineffective. The wound was re-opened, the internal iliac arteries ligated and bleeding stopped promptly. A second patient had secondary bleeding eight days after a perineal prostatectomy for benign adenoma. This required cystostomy and packing of the prostatic fossa which controlled bleeding at the time. He was discharged in twelve days then re-admitted ten days later with profuse bleeding. At this time the internal iliacs were ligated and the prostatic fossa packed by cystostomy. His recovery was uneventful. Both of these patients now void well. They are continent of urine and neither has gluteal pain.

MEDICAL MEANS

A. *Estrogenic substances*

Premarin,® Estradurin,® diethylstilbesterol phosphate and others have been advocated for the control of prostatic hemorrhage. We have not been impressed with the value of any drugs either preoperatively as prophylaxis against blood loss or post-operatively to control hemorrhage. The writers who recommended their use give no accurate evaluation of their value such as a decrease in measured blood loss. In one instance of fibrinolysis the intravenous administration of diethylstilbesterol phosphate seemed effective in controlling hemorrhage.

B. *Calcium, Vitamin K and Vitamin K_1*

These drugs are usually given when post-operative bleeding is excessive but in our experience their value is questionable. It is difficult to evaluate drug therapy in bleeding because hemorrhage may cease spontaneously, whether drugs are given or not. In replacement of whole blood we

give one gram of calcium gluconate intravenously with every liter of blood to prevent calcium deficit.

C. *Fibrinogen and Albumin*

In this series there were three cases of fibrinolysis all of which followed transurethral resection. Two patients had hyperplasia of the prostate and a third had carcinoma. Fibrinogen was given in two cases but was not effective. In one case reported by Kavan, Bettaglio and Buehler[9] diethylstilbesterol phosphate was effective in controlling bleeding. In the first two cases effective treatment consisted of the administration of whole blood and Albumisol (desalted human albumin). It has been reported that Epsilon Caproic Acid (Merke) is a specific deactivator of the fibrinolysin activator substance but we have had no experience with it.

COMMENT

From this study it is evident that death from hemorrhage is the principal risk to a patient undergoing prostatic operation. This is in contrast to earlier studies when sepsis and uremia were the chief causes of death. To reduce the mortality from prostatic operations further we must find better methods to control hemorrhage.

SUMMARY

Irreversible shock due to excessive blood loss during prostatic operations is an obvious cause of death but death from circulatory complications is less easily related to blood loss. Insidious or unrecognized hemorrhage probably is an important factor in death from strokes, emboli, thrombotic phenomena or heart failure. A report on the operative mortality in 640 consecutive cases of prostatectomy is presented. The mortality rate was 1.1 per cent. The significance of hemorrhage related to mortality and the various ways to control hemorrhage by mechanical means or by the use of drugs are discussed. □

BIBLIOGRAPHY

1. Rees, W. S.: Causes of death in senile benign prostatic enlargement. A survey of 643 cases; Br. J. Urol. Vol. 19: 83, 1947.
2. Stearns, David B.: Retropubic prostatectomy 1947-1960; a critical evaluation; J. of Urol. Vol. 85, No. 3, pg. 322, 1961.
3. Bonnin, N. J.: Prostatectomy—Rationale and a technique. March 1960; Med. J. of Australia, pg. 361, 1960.
4. Salvaris, Michael: Retropubic prostatectomy—An evaluation of 1200 operations—March 1960; Med. J. of Australia, Vol. I: pg. 370, 1960.
5. Thrasher, C. B. and Beglin, P. M.: Prostatectomy; a survey of 2000 cases. California Medicine; Vol. 91, No. 6, pg. 338; (December) 1959.
6. Goodyear, W. E. and Beard, Donald E.: Blood loss in prostatectomy; J. of Urol., Vol. 62, No. 6, pg. 849, (December) 1949.
7. Nesbit, R. M. and Conger, K. B.: Studies of blood loss during TUR. J. of Urol. 46: pg. 713, 1941.
8. Willmer, C. E. and Hamm, R. S.: Radical control of post-prostatectomy hemorrhage. Archives of Surgery 73: 790, 1956.
9. Kavan, L., Bettaglio, A. and Buehler, H.: Fibrinolysis in benign prostatic hypertrophy. J. of Okla. State Med. Assoc.; Vol. 53: No. 6, pg. 426, (June) 1960.

Ralph C. Emmott, M.D.
528 N.W. 12th, Oklahoma City, Oklahoma

CORRECTION

It is unfortunate that three errors occurred in the March issue of *The Journal.* Corrections are listed below:

Allergic Reactions to Low Environmental Temperature "Cold Allergy" by Leon Horowitz, M.D. *Three lines which appeared at the top of page 84 should have appeared at the top of page 83.*

Computers in Modern Medicine by James A. Hagans, M.D., Ph.D., and William W. Schottstaedt, M.D. Doctor Hagans is *Assistant Professor* in the *Department of Medicine* and *Associate Professor in the Department of Preventive Medicine and Public Health.* His title is *Director of the Biostatistical Unit and the Medical Research Computer Center.* Reference #3 of this article should have read "Accomplishments in Human *Simulation.*"

These errors are regretted by the *Journal* staff.

Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy

PHILIP J. MAGUIRE, M.D.

A discussion of an acute vascular accident that occurs during pregnancy or the puerperium.

VARICOSITIES of the utero-ovarian veins are frequently noted during Caesarian section or laparotomy. However, one seldom finds reports in the literature of rupture of these vessels (although it is often mentioned as a possibility in the teaching of house officers).

The occurrence of such an accident is most often an emergency. Immediate diagnosis and action are imperative. Johnston and Arban[3] and Shuey[6] have recently reviewed the literature on this subject and added two new cases of their own, bringing the total to 78. Their reports imply a grave prognosis. According to these investigators the over-all mortality is about 50 per cent, but during labor the rupture of utero-ovarian vessels carries a mortality rate of 76 per cent. The case reported here is one of rupture of utero-ovarian vessels during labor with intraperitoneal, retroperitoneal and subserosal hemorrhage about the cecum.

CASE REPORT

The patient was a 25-year-old Negro female para vii gravida viii who entered the hospital in active labor on 7-12-61. After a spontaneous and unassisted delivery without anesthesia the patient was found to have a second degree laceration of the perineum. This was repaired under local anesthesia. The infant was a normal seven pound four ounce male. The Hgb on admission was ten gms. Immediately postpartum the course was complicated only by slight abdominal distention. Approximately 16 hours postpartum the patient began to complain of pain in the right lower quadrant of the abdomen. At this time the Hgb was 8.7 gms. During the next few hours the pain and distention increased. On pelvic examination no masses were palpable but there was marked tenderness over the right side of the pelvis. Rebound tenderness developed over the right lower quadrant of the abdomen. A repeat Hgb was 9.1 gms. At 20 hours postpartum the bowel sounds were decidedly hypoactive with only an occasional tinkle. It was thought that the patient now had an acute surgical abdomen. The surgical consultant's opinion was that the patient had either acute appendicitis or rupture of a utero-ovarian vessel. A flat-plate of the abdomen revealed greatly distended large bowel with distal small bowel distention. No flatus had been passed in several hours but there was no evidence of mechanical obstruction. A Divine tube was placed and a rectal tube was used intermittantly in an attempt to relieve the distention. Prior to this time the patient had remained afebrile and presented no shock-like picture. Approximately 20 hours postpartum her condition seemed to

---

Philip J. Maguire, M.D., graduated from the University of Oklahoma School of Medicine in 1960 and is now a Resident in Obstetrics and Gynecology at Saint Anthony Hospital in Oklahoma City.

be progressively deteriorating, the temperature became elevated to 100.2°. The patient was then taken to surgery.

At laparotomy about 100 cc. of old, dark-red blood was found in the right gutter. There was retroperitoneal hemorrhage from the cecum to the midline. Subserosal hemorrhage with a small hematoma was detected about the cecum. No active bleeding points could be identified. The appendix and adnexae were not remarkable. Furthermore a complete abdominal exploration revealed no abnormalities. Considerable distention of the colon and distal small bowel were evident. The surgical consultant agreed no further exploration was warranted and the abdomen was closed without ligation of any vessels. Postoperatively the patient developed a paralytic ileus which was treated successfully with small bowel suction and parenteral fluid therapy.

DISCUSSION

Current textbooks[1, 2] devote scant space to this condition, if they mention it at all. The condition may be broadly classified into three main types based upon the site of bleeding: 1. intraperitoneal, 2. retroperitoneal and 3. combined intra- and retroperitoneal hemorrhage. Pieri[5] discusses a similar situation in which there is extension of a vaginal hematoma upward into the subperitoneal space. The bleeding may be profuse, rapidly resulting in profound shock. In other instances there may be a slower type of hemorrhage presenting the picture of chemical peritonitis. It should be noted that rupture of the vessels may occur at almost any time during the course of pregnancy. It has been reported as early as the tenth week of pregnancy and as late as the 21st day postpartum. Jurishica's[4] series includes a case wherein no evidence of pregnancy was found at laparotomy.

The venous pressure in pelvic veins is increased during pregnancy resulting in the friable, varicose condition noted at operation. It is conceivable that with straining and sudden changes in position the enlarged and gravid uterus might rupture such vessels. The case presented here was associated with precipitate delivery. One wonders whether the two events could be complimentary though an exact explanation cannot be given. Retroperitoneal hemorrhage also occurs in association with perfectly normal labors[6] (reiterating the necessity of close postpartum observation).

This patient did not go into shock although it was considered to be impending. And as in a patient in Jurishica's[4] report the source of bleeding was not found. This author divides these cases into two main groups: I, patients with massive hemorrhage and hemorrhagic shock the presenting picture; II, those with slow bleeding and signs of an acute abdomen or paralytic ileus presenting. The great majority of patients who have had this accident do go into shock requiring blood replacement and supportive therapy. It would seem that rupture of the utero-ovarian vessels might be permanently added to the list for the differential diagnosis of obstetric shock and acute abdomen during pregnancy and the puerperium.

SUMMARY

Rupture of utero-ovarian vessels during pregnancy is discussed. A case is presented which masked as an acute surgical abdomen. Following a laparotomy, at which the source of bleeding was not found, the patient recovered. It is postulated that more stress might be placed on this event as a cause of acute surgical abdomen or shock during pregnancy and the puerperium. □

REFERENCES

1. Eastman, N. J.: Williams Obstetrics, (ed 11) New York, Appleton, 1956.
2. Greenhill, J. P.: Obstetrics, (ed 12) Philadelphia, W. B. Saunders, 1960.
3. Johnston, C. C. and Arban, A. T.: Hemorrhage From Rupture of Utero-ovarian Vein. JAMA 174(5): 528, 1960.
4. Jurishica, A. J. and Gutglass, M.: Bleeding from Utero-ovarian Vessels. Obst. & Gynec. 6: 315, 1955.
5. Pieri, R. J.: Pelvic Hematomas Associated with Pregnancy. Obst. & Gynec. 12: 249, 1958.
6. Shuey, P. B.: Spontaneous Rupture of a Utero-ovarian Vein During a Normal Spontaneous Delivery. Am. J. Obst. & Gynec. 80(4): 764, 1960.

Saint Anthony Hospital, Oklahoma City, Oklahoma

Hydrops of the Gallbladder in A Three-Year-Old Girl

D. W. BOBEK, M.D.

Case of hydrops of the gallbladder in a three-year-old is reported. Summary of the seven other reported cases is presented.

HYDROPS of the gallbladder in infants and children is a rare entity. Only seven cases have been reported in the literature. In addition to its rarity, the etiology and symptomatology of this disease is not clearly understood due to the paucity of cases encountered by any one physician.

If cases of this disease are accurately and completely reported as they occur, enough material could be accumulated to allow significant conclusions.

CASE REPORT

A three-year-old Indian female was seen in the St. John's Hospital outpatient department with acute tonsillitis and a temperature of 103 degrees orally. She was apparently responding well to penicillin and streptomycin. Seven days later she was seen again with an oral temperature of 103 degrees. Ear, nose and throat examination was not remarkable. She was admitted to the pediatric service and penicillin was administered again. Three days after her admission the white blood count was 27,200 with 93 neutrophils of which three were metamylocytes, 11 were band forms, and 79 were segmented. A corrected erythrocyte sedimentation rate was 40. Her alkaline phosphatase was 7.4 units and the cephalin flocculation was negative. A Van den Berg test was 0.6 mgm per cent one minute and 0.8 mgm per cent total. By the sixth hospital day the white blood count had returned to normal. A barium enema was done after a tender mass had been palpated in the right lower quadrant. This examination showed the appendix to fill with barium remaining in the tip of the appendix following evacuation.

On the ninth hospital day surgical consultation was requested and the patient was prepared for operation anticipating a possible appendiceal abscess. Exploratory laparotomy showed hydrops of the gallbladder. Cholecystectomy was done without difficulty.

Gross examination of the specimen showed a gallbladder measuring 10 x 6 x 4.5 cm. The serosal surface was grayish pink, smooth and glistening. Section revealed a grayish yellow watery fluid streaked with grayish pink bile. The mucosa was smooth and flattened and the gallbladder wall measured up to three cm. in thickness.

Donald W. Bobek, M.D., Tulsa physician, graduated from the University of Oklahoma School of Medicine in 1955. His practice is limited to his specialty, general surgery.

SUMMARY OF REPORTED CASES

Author	Age	Sex	Fever	Nausea Vomiting Abd. Pain	Abdominal Tenderness	Palp. Mass	Diarrhea	Preceding Febrile Illness	Liver Function	Operation
1. Narat #1	4	M	+	+	+		Not Reported	Not Reported		Explor. Lap. Aspir. G.B.
2. Lee and Englander #4	7	M	+	+	+	+		Acute Pharyngitis		Cholecystectomy
3. Greenstein & Wesson #2	14 mo	M				+				Cholecystectomy
4. McEachern Et Al. #5	5	F	+	+	+	+	Not Reported	Not Reported		Cholecystectomy
5. Codington & Platt #1	22 mo	M	+			+	+	+ & Papular rash		Cholecystectomy
6. McGahan & Whittinghill #6	5	F		+	+	+	+	Not Reported	Ceph Flocc 3+	Cholecystectomy
7. McGahan & Whittinghill #6	3½	M		+	+	+		Symptoms 5 days		Cholecystectomy
8. Bobek	3	F	+	+	+	+		+	Elevated alk. phos. ceph. floc Van den Berg	Cholecystectomy

Microscopic examination of the gallbladder showed mucosal folds flattened and covered by columnar epithelium. The mucosa was heavily infiltrated by lymphocytes and plasmacytes. The muscularis showed similar chronic inflammation. The serosa showed fibroblastic proliferation and in some areas showed heavy infiltration by plasmacytes, lymphocytes, eosinophils and occasional neutrophils.

Her postoperative course was uneventful and she was discharged on the 12th postoperative day. She has remained asymptomatic for one year.

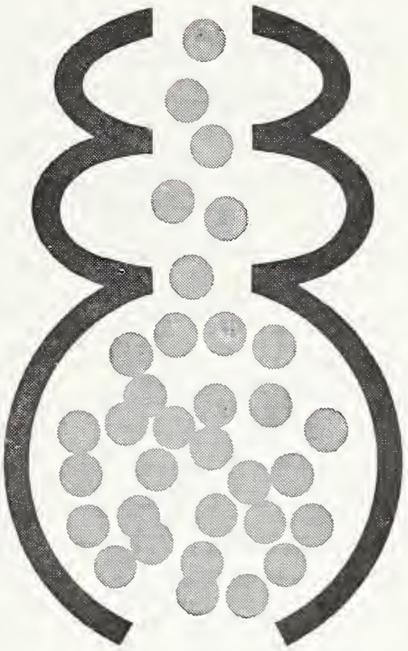
SUMMARY

A case report of a three-year-old female with hydrops of the gallbladder is presented. In addition, a brief outline summary of this case and the seven previously reported cases is presented. The small number of reported cases prevents one from drawing definite conclusions in regards to the etiology and typical course of this disease in children. □

BIBLIOGRAPHY

1. Codington, John B. and Platt, Marvin: Hydrops of the Gallbladder in an Infant. Southern Medical Journal 51: 1529-1531, (December) 1958.
2. Greenstein, Nathan M. and Wesson, Howard: Hydrops of the Gallbladder in a Fourteen Month Old Infant. American Journal of Diseases of Children 87: 208-211, (February) 1954.
3. Haubrich, William S. and Block, Melvin A.: Observation on Protracted Cystic Duct Obstruction with Hydrops. Henry Ford Hospital Medical Bulletin 5: 125-128 (June) 1957.
4. Lee, C. Marshall and Englander, Gail S.: Massive Hydrops of the Gallbladder Producing Pyloric Obstruction in a Seven Year Old Boy. Pediatrics 11: 449-453 (May) 1953.
5. McEachern, C. G., Sullivan, R. E., and Arata, J. E.: Massive Hydrops of the Gallbladder in a Five Year Old Girl. Annals of Surgery 142: 1038-1040 (December) 1955.
6. McGahan, John J. and Whittinghill, John A.: Acute Idiopathic Hydrops of the Gallbladder not due to Calculi, Possibly to Infectious Hepatitis. Pediatrics 21: 91-93 (January) 1958.

Utica Square Medical Center, Tulsa, Oklahoma



LOMOTIL®

(brand of diphenoxylate hydrochloride with atropine sulfate)

ANTIDIARRHEAL TABLETS and LIQUID

lowers motility / relieves cramping / controls diarrhea

Roentgenographic studies by Demeulenaere[1] established that a single dose of 10 mg. of Lomotil slowed gastrointestinal transit within two hours and that it maintained its decelerating activity for more than six hours.

In diarrhea this lowered propulsion permits a physiologic absorption of excess fluid, lessens frequency and fluidity of stools and gives safe, selective, symptomatic control of most diarrheas. Concurrently, it conserves electrolytes and controls cramping.

Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

NOTE: Lomotil is an exempt narcotic preparation.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastraintestinal, Acta Gastraent. Belg. 21:674-680 (Sept.-Oct.) 1958.
2. Kasich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastraent. 35:46-49 (Jan.) 1961.
3. Weingarten, B.: Weiss, J., and Simon, M.: A Clinical Evaluation of a New Antidiarrheal Agent, Amer. J. Gastraent. 35:628-633 (June) 1961.

G. D. SEARLE & CO.

Research in the Service of Medicine

Transient Cerebral Ischemic Attacks

STEPHEN W. THOMPSON, M.D.*

THE PREVALENCE of cerebral atherosclerosis and infarction, with its resulting severe disability, has stimulated widespread interest and study. New concepts of the pathophysiology and a more positive therapeutic approach have resulted.

That atherosclerotic narrowing of arteries as remote from the brain as the common carotid or vertebral can produce brain infarction has been appreciated for a relatively short time. Furthermore, infarction with lasting disability ("stroke") is not the sole result of such narrowing. Episodes of neurologic deficit of short duration, with recovery, may occur even with complete occlusion of the common carotid, vertebral or basilar artery. These episodes have been termed "transient ischemic attacks," and their manifestations are those of nonfunction of the part of the brain supplied by the affected artery. The clinical picture varies greatly, but such attacks have in common the rapid onset of focal neurologic deficit with recovery after several minutes to several hours. They occur, usually, in patients over fifty years old.

Carotid ischemic attacks typically consist of weakness or sensory disturbance in the opposite half of the body. Frequently the arm and hand are more severely involved than the leg and, with a right sided attack (left carotid), aphasia may also be present. Blindness of the eye on the side of the affected artery may occur during an attack. Less commonly, loss of consciousness or even a convulsive seizure may occur. Absent pulsation of a carotid, lowered retinal artery pressure on the involved side (measured with the ophthalmo-dynamometer) or a bruit heard over a carotid help to confirm the diagnosis.

Vertebral or basilar ischemic attacks often include hemiparesis or loss of consciousness. Features which, when present, distinguish them from carotid attacks include those of involvement of posterior fossa structures. Thus, whirling vertigo and nystagmus, cerebellar signs, difficulty swallowing, altered sensibility over one side of the face and diplopia all suggest basilar or vertebral involvement. Bilateral hemiparesis or hemiparesis alternating from side to side in different attacks is typical also because the descending motor pathways to both sides of the body are supplied by the one basilar artery. The posterior cerebral arteries, supplying the visual cortex, are branches of the basilar, and bilateral blindness during an attack strongly implicates the vertebral basilar system.

Repeated ischemic attacks may result in the accumulation of permanent deficit. Their occurrence frequently, though not always, heralds the approach of a major "stroke." Anticoagulation is felt by many to be efficacious in stopping the attacks or decreasing their frequency and, perhaps, in preventing a "stroke." Favorable response has been noted particularly in vertebral-basilar disease. Such treatment is not without danger, however, and should be undertaken only with care and in the absence of any of the accepted contraindications. Carotid lesions in the neck are surgically accessible. Endarterectomy, or bypass procedures, often are effective in controlling attacks. Angiography is used to locate the lesion prior to operation.

The possibility of preventing or minimizing the disability from a "stroke" makes accurate diagnosis and thoughtful application of available therapeutic measures worthwhile.

EDITOR'S NOTE: A 224 page book, "Cerebral Vascular Disease" by Irving S. Wright and Clark H. Millikan is available at a cost of $5.00 from the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma. □

*Acting Chief, Neurology Service, Veterans Administration Hospital; Instructor, Department of Medicine, University of Oklahoma Medical Center.

Dean's Message

An adequate supply of new nurses continues to be a matter of deep concern at the Medical Center. No one is more painfully aware of the present shortage than the practicing physicians and hospitals. It is equally obvious that more nurses must be available in the future for an increasing population and to meet the demands of new developments in medical practice.

The administration of the University of Oklahoma School of Nursing has accelerated its efforts to attract able young persons into nursing, to hold their interest, and to offer them an education of high quality.

Under the able leadership of Miss Helen Patterson, appointed Dean last year, the School has adopted an aggressive recruitment policy, and with the acquisition of nurse specialists on the faculty, the efficiency of students' nursing practice has increased. Miss Patterson brought to the newly-established position of Dean a diversified background including practical experience in hospital nursing.

The period required to obtain the degree in nursing has been shortened from 43 to 38 months. This is notable among the changes resulting from curriculum revisions effective this year. Students enrolled in the degree program spend two years on the Norman campus, followed by a summer session and two academic years at the Medical Center. The addition of a nursing laboratory on the Norman campus permits basic skills to be introduced at an earlier date for beginning hospital experience.

Qualified faculty members have been added in each of the major clinical fields of pediatric, medical-surgical, and psychiatric nursing so that students may be better prepared for positions in all fields of nursing practice.

The School has established liaison with the University of Oklahoma recruitment program in the high schools, and faculty members also are devoting more time to visiting the junior colleges to inform students of nursing career possibilities. The School of Nursing maintains a counselling service, too, for those students who wish to complete the pre-nursing requirements in schools other than OU.

An increasing number of loan and scholarship funds are now available including those generously provided by the medical auxiliaries. Last year the Lew Wentz Foundation for the first time offered 16 service scholarships to students in the School of Nursing. With such assistance available, financial need should be no obstacle to a qualified young person bent on a nursing education.

The School of Nursing will appreciate your continued help in informing capable youth of these opportunities both in the degree program and the three year certificate program which is of course being continued.

Mark R Everett

Electrocardiographic Abnormalities in Congenital Heart Disease: QRS and T

THOMAS N. LYNN, M.D.

The electrocardiogram, though rarely diagnostic of specific congenital heart lesions, can be of great aid in determining whether disease exists and give direction to other diagnostic studies.

WITH THE RECENT advances in cardiac surgery, anesthesiology, pre and postoperative care and the development of acceptable cardio pulmonary bypass units, congenital heart disease has ceased to be a medical curiosity. All but the most complex of these defects are now subject to surgical correction. This advance in therapeutics has necessitated an equal advance in diagnostic ability which has largely been brought about through the development of cardiac catheterization, angiocardiography, and dye and gas techniques. One of the problems still confronting the physician is the decision as to whether or not an individual has heart disease and whether catheterization is indicated at that time. It is in this area of diagnosis that electrocardiography is most useful and it was with this in mind that the present study was undertaken.

METHODS AND MATERIAL

Patient records from the clinic of surgery of the National Heart Institute, The Children's Hospital of the District of Columbia and the University of Oklahoma Medical Center were examined. Cases were selected for inclusion in this series based on the following criteria:

1. Each of these patients had a standard 12 lead electrocardiogram.
2. Each of these patients had their cardiac defect visualized, either by a surgeon at the time of operation or by a pathologist at the time of autopsy. No cases were accepted in which the diagnosis was made by catheterization only.

By this method, 187 cases of congenital heart disease were collected and were subclassified according to the defect found into the following: aortic stenosis, pulmonic stenosis, atrial septal defects of the ostium secundum or sinus venosus type, endocardial cushion defects including ostium primum, ventricular septal defects, tetralogy of Fallot, and patent ductus arteriosus. Although there were many cases found in which there were multiple or more complex defects, no one entity constituted a large enough group to justify inclusion as a separate category.

In addition, electrocardiograms were taken on 77 apparently normal children between the ages of six months and four years. These children were temporary residents of a domiciliary home and each had been examined by a physician and judged to have no cardiac defect.

All of the tracings were taken with a Sanborn direct writing unit in a standard manner.[1] The recordings were standardized so that one millivolt equalled one centimeter.

The cardiograms of both the "normal" and "abnormal" groups were examined for

each of the following: mean QRS and T axis in both the frontal and horizontal planes, the frontal plane axis of the .02 sec. QRS, .04 sec. QRS, and the terminal QRS, and the height of the R wave in V_1 and V_5. A "mean QRS or mean T axis" refers to the average or predominant direction in which the electrical forces are oriented. Similarly the QRS complex may be broken into time intervals and the average direction of the electrical forces generated during that time interval calculated, hence the .02 sec. QRS, .04 sec. QRS, and terminal QRS. The "frontal plane" in the context of this subject material, may be considered to be defined by the limb lead electrodes; the "horizontal plane" is that plane perpendicular both to the frontal plane and to the long axis of the body. The electrical cardiac vector forces were located after the method of Grant,[2] and for graphic presentation, have been plotted on a circular "axis chart," broken into twelve sectors. These charts show the per cent incidence within each of the clinical subgroups of specific frontal plane vectors lying in each of the sectors. All vectors for the entity under consideration localized within each sector are combined and presented along the "mid radius" of that sector. The distance along this "mid radius" from the center to the edge of the shaded area represents the percentage distribution of all vectors in that sector. The frequency reference system consists of concentric circles arranged in a logarithmic scale representing increments of ten per cent starting from the center.

Thomas N. Lynn, M.D., graduated from the University of Oklahoma School of Medicine in 1955 where he is now an Instructor in the Department of Medicine and Assistant Professor in the Department of Preventive Medicine and Public Health. His practice is limited to his specialty, internal medicine (cardiology).

Doctor Lynn is a member of the Alpha Omega Alpha, the Oklahoma State Heart Association and the Oklahoma Thoracic Society.

RESULTS: NORMAL CHILDREN, AGE SIX MONTHS TO FOUR YEARS, 77 CASES

The electrocardiograms of the younger age groups present the greatest difficulty in separating abnormal from normal because of the physiologic right ventricular prominence[3] and consequent "fat" QRS loop, and because of the wide variations in QRS elec-

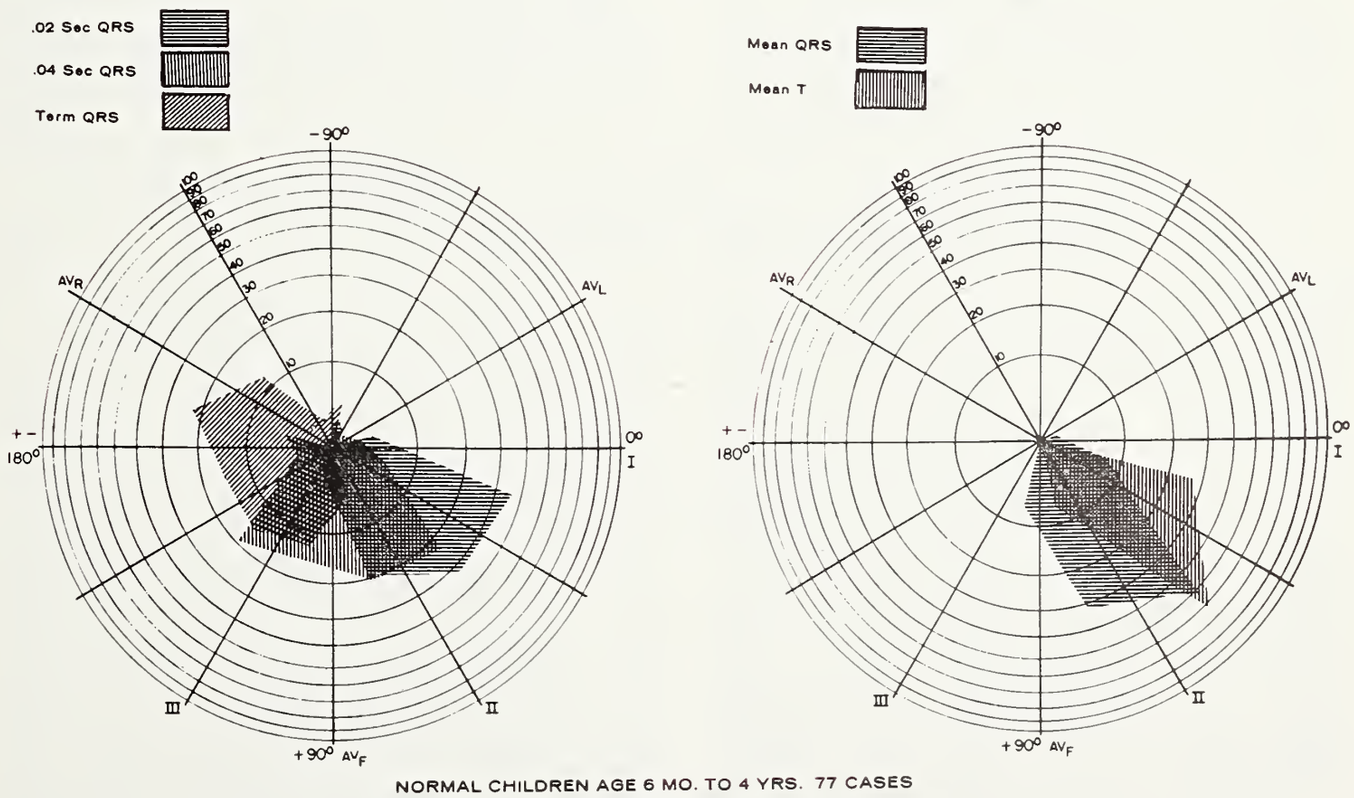


Figure I.

tromotive force found from one normal child to another. It is, however, possible to make an intelligent assumption concerning the normality of a tracing based in part on the parameters studies in this series.

The mean frontal plane QRS axis was found to lie between —30° and +120°, however, only 1.3 per cent were found to lie in 0° to —30° sector. The mean frontal plane T axis varied less in direction, ranging between 0° and +90°. The breakdown of the frontal plane QRS vectors into the .02 sec., .04 sec., and terminal QRS vectors showed that the angle between .02 sec. and .04 sec. vectors was relatively narrow (about 30°) but that the angle between the .02 sec. and .04 sec. vectors and the terminal QRS vector was wide (about 90° and 60° respectively). The values obtained for the height of the R wave at V_1 and the direction of the mean QRS axis in the horizontal plane demonstrated the variability of normal children of this age group in these two parameters and showed that a diagnosis of R.V.H. (right ventricular hypertrophy) proposed only on the basis of either the voltage of the R or the "R/S ratio" in lead V_1 is tenuous at best.

Contrasted to the variability of the mean QRS axis in the horizontal plane, the mean T axis in this plane was surprisingly constant and was found to be posteriorly directed in 98.7 per cent of cases. The only significant difference between the data presented for this group and that recorded by Ziegler[4] covering 110 patients of the same age, was found in height of the R at lead V_5. He found the maximum deflection to be 40.0 mm., while in this series, no deflection was found to be greater than 30.0 mm. The reason for this difference was not readily apparent, however, the figure of 30.0 mm. did appear to be useful in differentiating normal from abnormal.

CONGENITAL AORTIC STENOSIS, 23 CASES

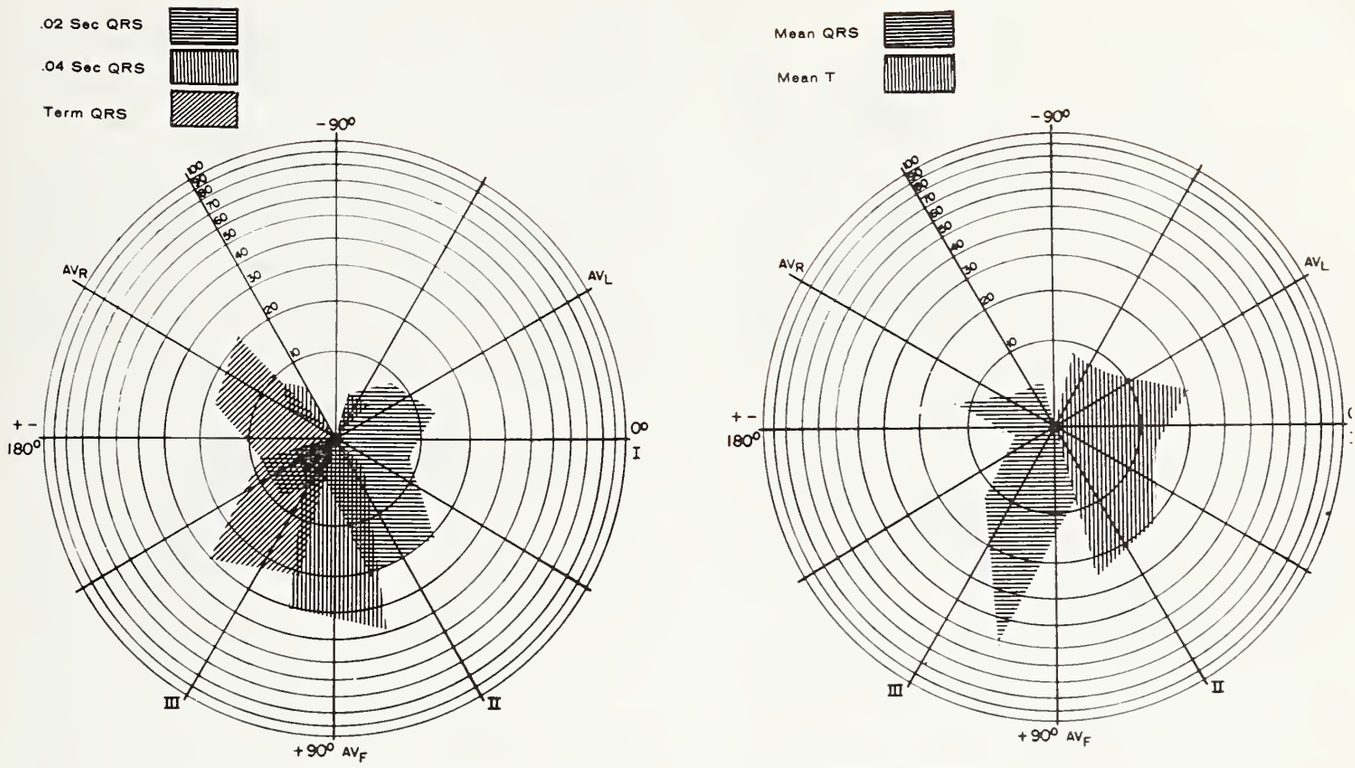
Average age 20.9 years, median age 17 years, age range four to 48 years

The mean frontal plane QRS axis varied from —60° to +120° with 75 per cent of cases lying between +30° and +90°, showing that L.A.D. (left axis deviation), although occurring, is not a common feature of this condition. The mean T axis in the frontal plane varied greatly with the highest incidence between +30° and +90° and between —90° and —150°, this dichotomy representing the T abnormality "L.V.S." (left ventricular strain) present in about half of these cases. It should be noted that the aortic stenosis patients were the only ones of the clinical groups having a significant incidence of L.V.S.

The .02 sec., and .04 sec., and terminal QRS vectors in the frontal plane all subtended a narrow angle with each other, probably

	Height of R at V_1				Height of R at V_5			Mean QRS axis Horizontal plane			Mean T axis Horizontal plane		
	0-5mm	6-15mm	16-30mm	30+mm	0-25mm	26-30mm	30+mm	Ant.	Post.	Flush ±15°	Ant.	Post.	Flush ±15°
Normal Children Age 6 mo.—4 yrs. 77 Cases	14.3%	70.1%	15.6%	0%	94.8%	5.2%	0%	29.9%	54.5%	15.6%	1.3%	98.7%	0%
Congenital Aortic Stenosis —23 Cases	87.0%	13.0%	0%	0%	43.5%	17.4%	39.9%	0%	100.0%	0%	73.9%	21.7%	4.3%
Congenital Pulmonic Valvular Stenosis— 23 Cases	21.7%	21.7%	39.1%	17.4%	91.3%	4.3%	4.3%	78.3%	17.4%	4.3%	30.4%	60.9%	8.7%
Ventricular Septal Defect—24 Cases	16.7%	33.3%	37.5%	12.5%	16.7%	20.8%	62.5%	66.7%	20.8%	12.5%	33.3%	54.2%	12.5%
Tetralogy of Fallot 30 Cases	6.7%	23.3%	43.3%	26.7%	96.7%	3.3%	0%	76.7%	13.3%	10.0%	40.0%	43.3%	16.7%
Patent Ductus Arteriosus 25 Cases	28.0%	44.0%	28.0%	0%	40.0%	20.0%	40.0%	16.0%	68.0%	16.0%	24.0%	56.0%	20.0%
Ostium Secundum 43 Cases	44.2%	46.5%	9.3%	0%	93.0%	4.7%	2.3%	76.7%	14.0%	9.3%	7.0%	81.4%	11.6%
Endocardial Cushion Defects—11 Cases	9.1%	63.6%	18.2%	9.1%	63.6%	27.3%	9.1%	100.0%	0%	0%	9.1%	81.8%	9.1%

TABLE I



CONGENITAL PULMONIC VALVULAR STENOSIS 23 CASES

Figure II.

because the right ventricular contribution to the electrocardiogram is relatively small.

The R wave in lead V_1 was small and the mean QRS axis in the horizontal plane was found in this series to be uniformly posteriorly directed. The mean T axis in the horizontal plane was variable, again reflecting the presence or absence of electrocardiographic L.V.S. The R wave in lead V_5 was greater than 30 mm. in 39.9 per cent of cases.

CONGENITAL PULMONIC VALVULAR STENOSIS, 23 CASES

Average age 19.2 years, median age 13 years, age range 1.5 to 50 years

The mean QRS axis was found to be directed to the right and anteriorly in a great majority of cases, being directed to the right in the frontal plane in 93 per cent of cases, and anteriorly in the horizontal plane in 78 per cent of cases. The .02 sec., .04 sec., and terminal QRS forces were found to subtend a wide angle with each other, and the terminal QRS forces were found to be directed to the right in all cases. The mean T forces were directed between +90° and —90° (leftward) in all cases, but varied in direction in the horizontal plane. The QRS-T angle was widened, averaging 90° to 120°. There was little difference between adults and children in any of the above parameters.

VENTRICULAR SEPTAL DEFECT, 24 CASES

Average age 7.6 years, median age six years, age range one-half to 29 years

The mean QRS and T vectors in the frontal plane were found to subtend a narrow angle, and it is of interest to note there were no instances of the very wide QRS-T angle of L.V.S. which was found in the aortic stenosis group of patients. No instance was noted in this series where the mean QRS was directed between —30° and ±180° as was frequent in the group of patients with pulmonic stenosis and endocardial cushion defects. The breakdown of the frontal plane QRS into .02 sec., .04 sec. and terminal forces showed only that a clockwise loop was usually inscribed with the terminal forces directed toward the right.

The QRS and T forces in the horizontal plane were variable, probably because this defect produces biventricular disease and because of great range in severity of the disease produced.[5] A striking deviation from normality appeared in the height of the R at V_5, where over 80 per cent of the patients had a deflection of greater than 25 mm.

TETRALOGY OF FALLOUT, 30 CASES

Average age 7.8 years, median age 7.5 years, age range three months to 28 years

It is apparent that the average QRS-T frontal plane angle was about 70°, and that the mean QRS was directed almost exclusively between +90° and 180° while the mean T was directed exclusively to the left. Little information was gained from the breakdown of the frontal plane QRS other than to appreciate that the .04 sec. forces, as well as the terminal forces were directed largely to the right with a very wide angle (approaching 180°) between the .02 sec. forces and the .04 sec. and terminal forces.

In the horizontal plane the mean QRS was found to be distinctly anteriorly directed in 76.7 per cent of cases, and the R deflection at V_5 to be normal in all but one case, reflecting the right ventricular disease produced by this combination of defects.

PATENT DUCTUS ARTERIOSUS, 25 CASES

Average age 13.5 years, median age eight years, age range 1.5 years to 40 years

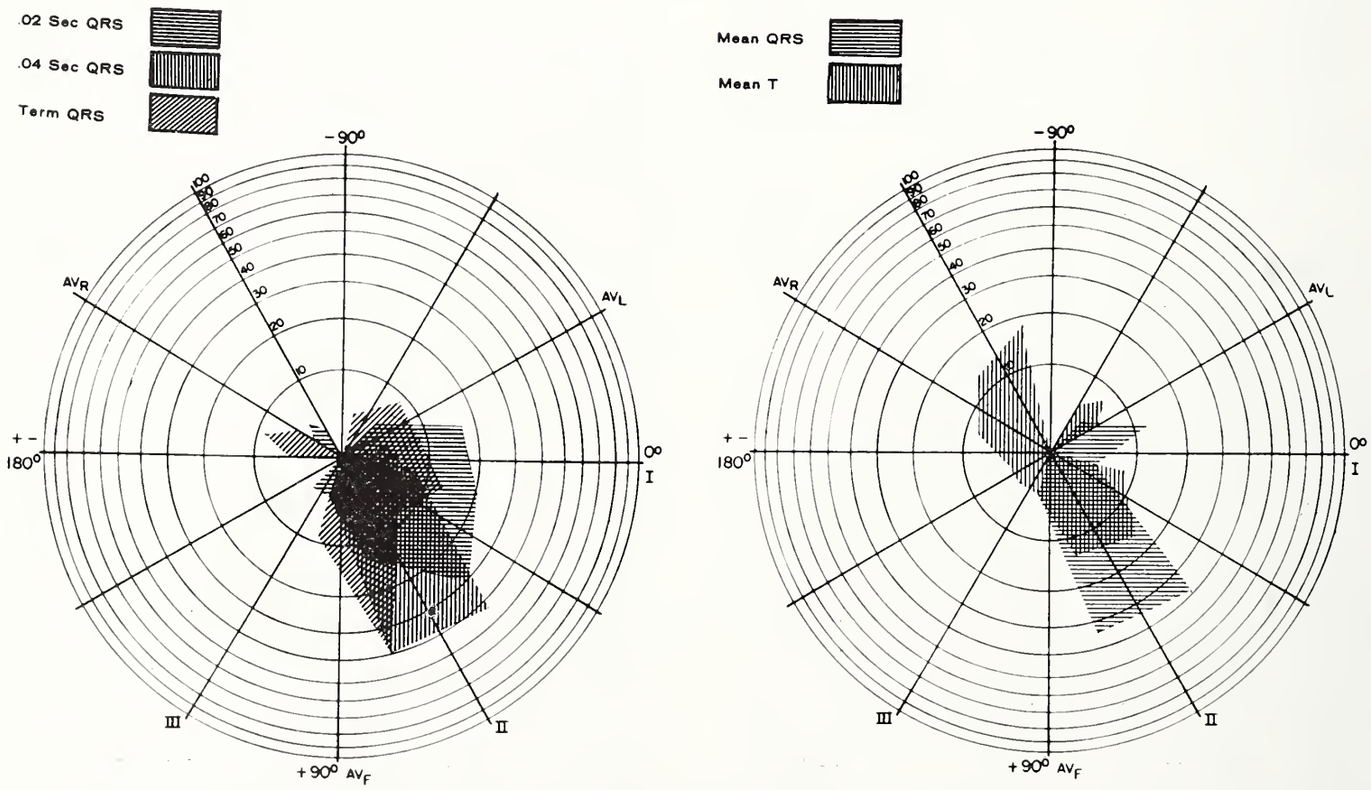
The patent ductus arteriosus group showed little deviation from normal in the direction of the frontal plane QRS and T vectors. The frontal plane QRS-T angle was found to be quite narrow, and there were no instances of the wide QRS-T angle of L.V.S.

In the horizontal plane, both the mean QRS and T axes were directed posteriorly in a majority of cases. The principal variation from normality was found to be that of increased voltage as reflected by the R deflection at V_5 where 60 per cent of cases showed an R of greater than 25 mm.

OSTIUM SECUNDUM, 43 CASES

Average age 22.3 years, median age 18 years, age range four to 49 years

The electrocardiogram of people with ostium secundum defects of the atrial septum is most nearly typified by "incomplete right bundle branch block." In vector terms, this is indicated by the terminal QRS forces which are directed to the right and anterior. These terminal forces in this series were of sufficient duration to cause the mean QRS axis to be directed to the right in about 90 per cent of cases and anteriorly in more than 75 per cent of cases. The breakdown of the frontal plane QRS vectors showed additionally that there were relatively wide angles between the .02 sec. and .04 sec. forces, and between the .04 sec. and terminal forces of about 45 and 60 degrees respectively.



CONGENITAL AORTIC STENOSIS 23 CASES

Figure III.

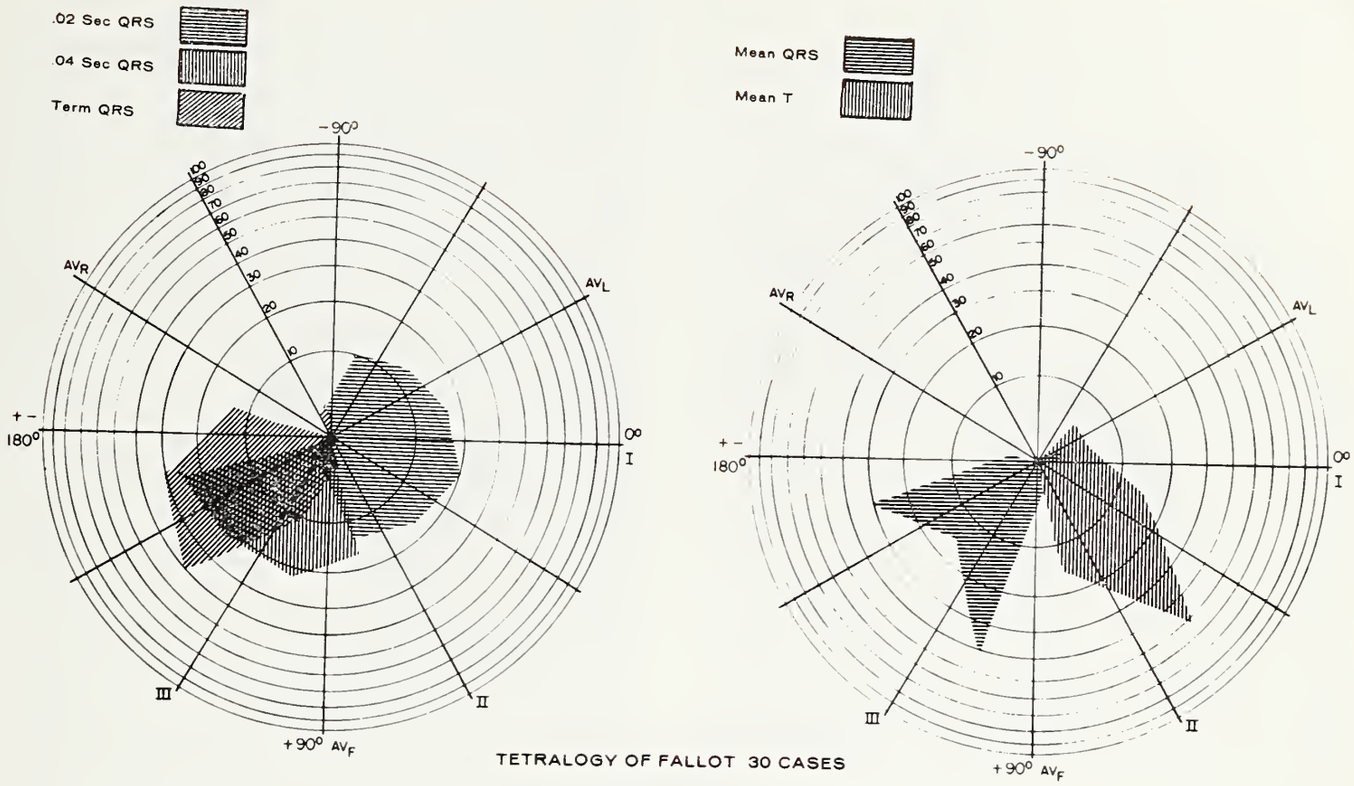


Figure IV.

The mean T vector in the horizontal plane was directed posteriorly in 81 per cent of cases, and was found to be directed to the left in the frontal plane in all cases.

The height of the R deflection at V_5 fell into a normal range in 93 per cent of cases. This was consistent with what was found in the patients with ostium secundum defects throughout their electrocardiograms, that is, that the abnormalities present were, in contra-distinction to patent ductus arteriosus, those of vector direction and QRS duration rather than increased voltage.

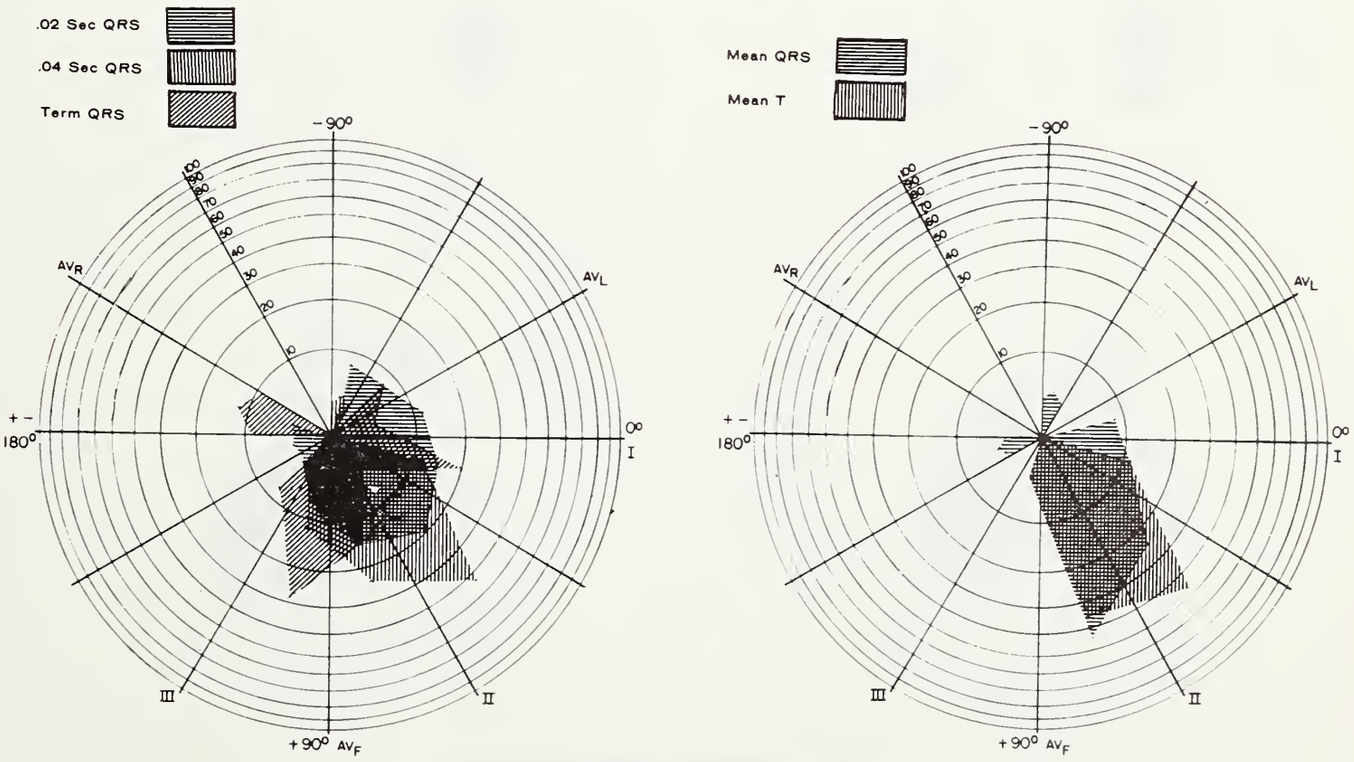


Figure V.

ENDOCARDIAL CUSHION DEFECTS, 11 CASES

Average age 17.8 years, median age 14 years, age range nine months to 52 years

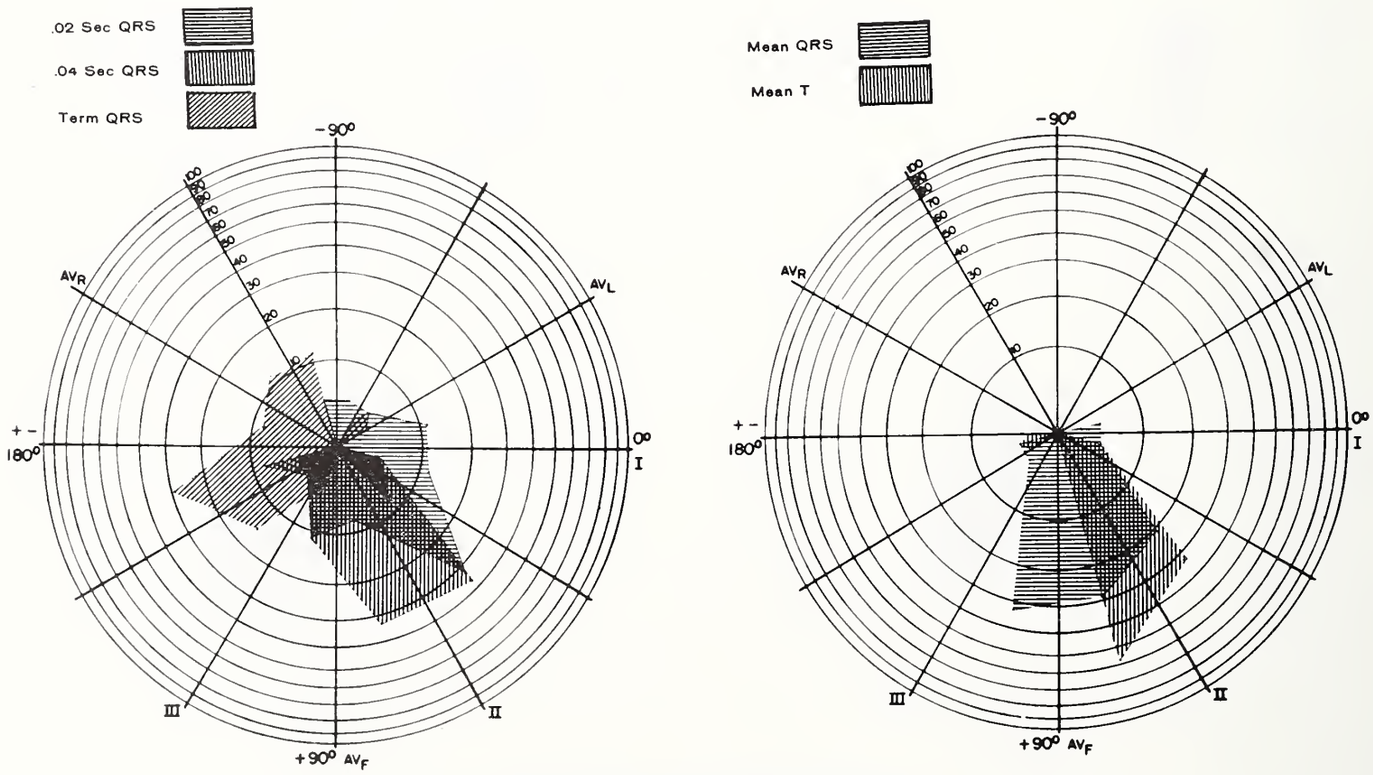
The electrocardiograms from this group of patients fell into two distinct categories, this distinction being based on the direction of the .04 sec. vector and mean QRS vector in the frontal plane. The mean QRS frontal plane vector was directed between 0° and —90° in just over 70 per cent of cases, the remaining 30 per cent being directed between +60° and +120°. A similar dichotomy was apparent in the .04 sec. vector. The terminal QRS forces were found to be directed to the right in 82 per cent of cases. In the horizontal plane, the mean T vector was posteriorly directed in 82 per cent of cases. About one-third of this group showed an R-V_5 deflection of greater than 26 mm.

DISCUSSION

The electrocardiogram is seldom the definitive means to a precise anatomical diagnosis in congenital heart disease. There are, however, electrocardiographic clues as noted in this and other studies that may be of great assistance in coming to a decision about whether to do a more elaborate or hazardous procedure. The electrocardiogram may also be of aid in indicating the most probable cardiac lesion and thus, the most appropriate procedure for definitive diagnosis.

There seems to be little disagreement that in patients with physical findings of atrial septal defect, the electrocardiographic findings of L.A.D. of the mean frontal plane QRS axis with right ventricular conduction delay is highly suggestive of a septum primum defect rather than a septum secundum lesion.[6, 7] Similarly, it is unusual for a patient with coarctation of the aorta, patent ductus arteriosus, or ventricular septal defect to demonstrate the 180° opposition of the mean frontal plane QRS and T forces[8, 9] that is commonly seen in aortic stenosis. The delayed, usually low amplitude, anteriorly and rightwardly directed QRS forces seen with ostium secundum lesions[10, 11] are useful but not infallible signs in differentiating this lesion from pulmonic stenosis and, more significantly, from normals.

The differences between the various congenital defects studied in this series in the angles formed by the .02 sec., .04 sec., and terminal frontal plane QRS vectors, were in-



VENTRICULAR SEPTAL DEFECT 24 CASES

Figure VI.

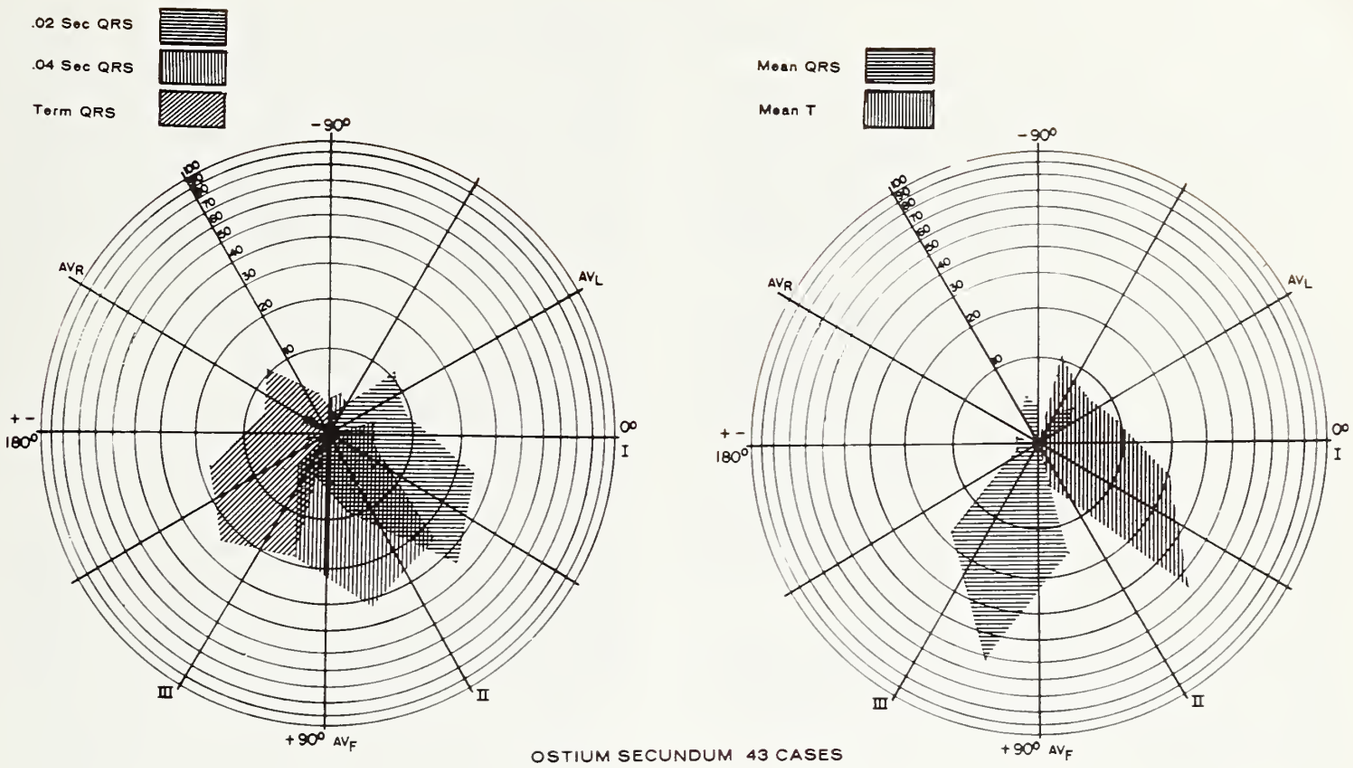


Figure VII.

teresting, statistically significant, and could logically be the subject of further investigation, but were too inconstant to be of real diagnostic value when applied to any individual patient.

In this study, in the age range of six months to four years, consistent signs of "abnormality" were found to be a mean T vector directed other than between 0° and +90° in the frontal plane and other than posteriorly in the horizontal plane. An additional "abnormal" sign was found to be the presence of an RV_5 of greater than 30 mm. The height of the R wave and the R/S

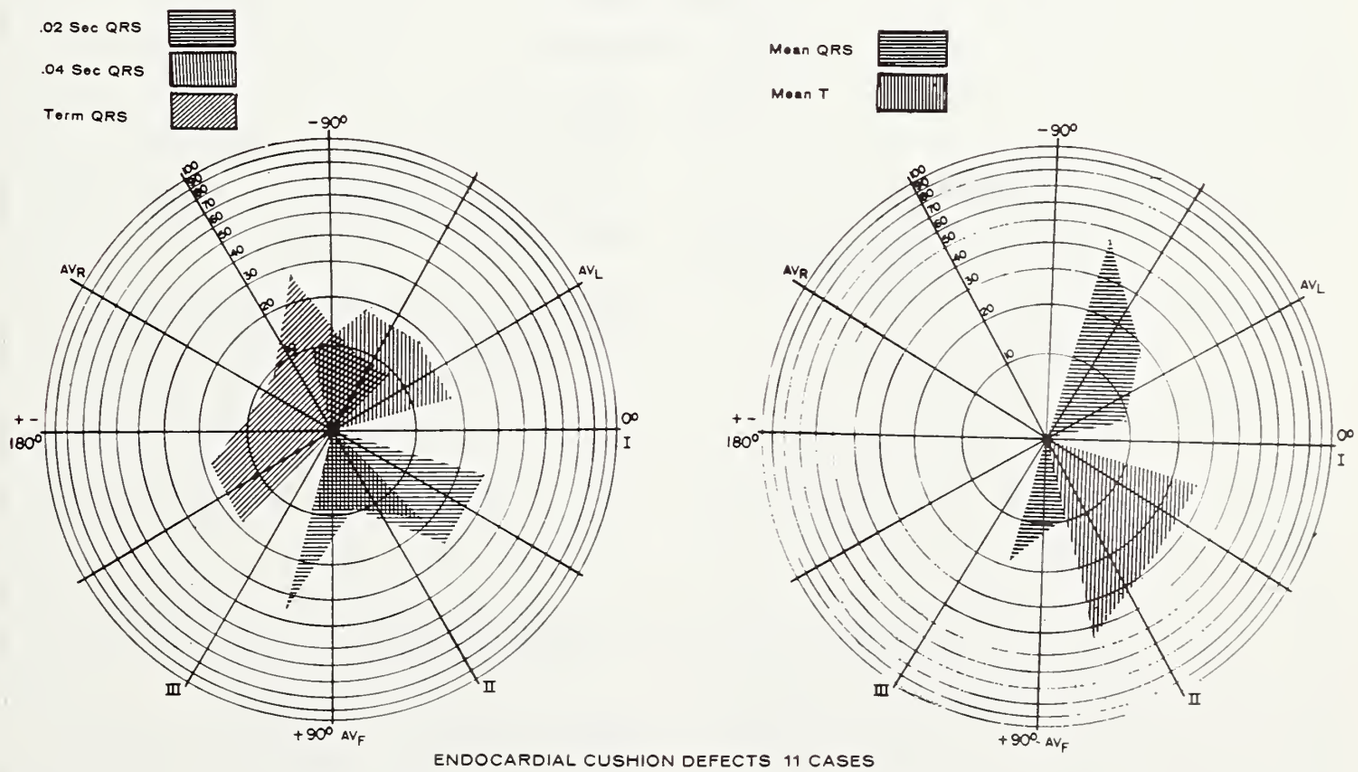


Figure VIII.

ratio at V_1, while apparently highly significant in the older child and adult, were often difficult to interpret for the younger child.

SUMMARY AND CONCLUSIONS

(1) The frontal plane .02 sec., .04 sec., terminal and mean QRS vectors, the frontal plane mean T vectors, and the horizontal plane mean QRS and T vectors were recorded and analyzed in 187 patients with congenital heart disease and in 77 apparently normal children ages six months to four years. In addition the height of the R wave at V_1 and V_5 was also recorded.

(2) It is concluded that diagnostically helpful but not anatomically specific data can be derived from such an analysis of electrocardiograms.

ACKNOWLEDGMENT

The author expresses gratitude to the Pathology and Cardiology Departments of the Children's Hospital of the District of Columbia, to the Clinic of Surgery of the National Heart Institute, National Institutes of Health, Bethesda, Maryland, and to the Medical Record Department, University of Oklahoma Medical Center, without whose help and cooperation, this study could not have been possible. □

BIBLIOGRAPHY

1. Goldberger, E.: Unipolar Lead Electrocardiography, London, 1947, Henry Kimptom Co.
2. Grant, R. P.: Spatial Vector Electrocardiography, Circulation 2: 676, 1950.
3. Hollman, A.: Electrocardiographic Diagnosis of Right Ventricular Hypertrophy in Infancy and Childhood, Brit. Heart J. 20: 129, 1958.
4. Ziegler, R. F.: Electrocardiographic Studies in Normal Infants and Children, Springfield, Ill., 1951, Charles C. Thomas.
5. Fyler, D., Rudolph, A. M., Wittenborg, M. H., and Nadas, A. S.: Ventricular Septal Defect in Infants and Children, Circulation 18: 833, 1958.
6. Pryor, R., Woodwark, G. M., and Blount, S. G.: Electrocardiographic Changes in Atrial Septal Defects: Ostium Secundum Defect Versus Ostium Primum (Endocardial Cushion) Defect, Am. Heart J. 58: 689, 1959.
7. Barboza, E. T., Brandenburg, R. O., and Swan, H. J. C.: Atrial Septal Defect, Am. J. of Cardiology 2: 698, 1958.
8. Abdin, Z. H.: The Electrocardiogram in Aortic Stenosis, Brit. Heart J. 20: 31, 1958.
9. Char, F., Adams, P., and Anderson, R. C.: Electrocardiographic Findings In One Hundred Verified Cases of Ventricular Septal Defect, A.M.A.J. Dis. Child. 97: 48, 1959.
10. Sodi-Pallares, D., Pileggi, F., Cisneros, F., Ginefra, P., Portillo, B., Medrano, G. A. and Bisteni, A.: The Mean Manifest Electrical Axis of the Ventricular Activation Process (AQRS) in Congenital Heart Disease: A New Approach in Electrocardiographic Diagnosis, Am. Heart J. 55: 681, 1958.
11. Burch, G. E., and De Pasquale, N.: The Electrocardiogram and Ventricular Gradient in Atrial Septal Defect, Am. Heart J. 58: 190, 1959.

OSMA REGIONAL POSTGRADUATE COURSE

HOTEL MIAMI

MIAMI, OKLAHOMA

MAY 1, 1962

AFTERNOON

4:30 p.m. Diagnosis of Pulmonary Infiltrates
Charles M. Harvey, M.D.

5:00 p.m. Respiratory Acidosis
Gilbert S. Campbell, M.D.

5:30 p.m. Recent Advances in Viral Respiratory Diseases
Harold G. Muchmore, M.D.

6:00 p.m. Evaluation of Possible Lung Cancer
Warren L. Felton, M.D.

EVENING

6:30-7:30 p.m. Dinner

7:30 p.m. Problem Case Conference
Moderator: Harold G. Muchmore, M.D.
Gilbert S. Campbell, M.D.
Warren L. Felton, M.D.
Charles M. Harvey, M.D.

REGISTRATION FEE $7.50 (Includes Dinner)

AAGP Category 1 Credit—Four Hours

The Truth

LEON C. FREED, M.D.

Remarks given at a conference on the care of the patient with incurable cancer, Veterans Administration Hospital, Oklahoma City

GIVEN, as all of us practicing medicine will be given, a patient with incurable carcinoma, the doctor faces these major problems:

Should the patient know the truth?

How can he be helped—as his functions decline—to pass the sequence of days on end with a minimum of pain and misery?

How can the relatives and friends of the patient be given the feeling that all that could or should have been done was done?

Should the patient be told the truth? I can give you no general rule of thumb, for there are too many variables to allow one to have a simple formula by which he can solve an equation which has so many interrelationships. That which is good medicine for one may prove catastrophic for another. The only dictum whereby the doctor may be wisely guided is for him to know the facts, his patient, and himself.

I would first dilate on the old adage, "Doctor heal thyself." For, in the role of doctor, you are more than a diagnostician and healer; you are a bearer of tidings of salvation or doom. On your demeanor, tone of voice and words hang the hope or despair of the sick and frightened patient. Falsely you are given a mantle of omnipotence and omniscience. The role of demi-god, hero and parent must be played with wisdom and constraint.

There are physicians who have entered the domain of healing with some secret yearning to direct and control these fellow beings of whom they are covertly afraid. Words uttered in the service of our concealed strivings may prove to be both intemperate and noxious. We are given to pronouncements of the truth with an underlying essence of brutality, in the guise of frankness. This is dispensing counsel where angels fear to tread. These are the physicians who advise the inhibited to engage in fleshly pleasure, prescribe matrimony for the perplexed, motherhood for the depersonalized, and Colorado for the depressed. They are most dogmatic and brutal when they are most harried and confused, for when they cannot be positive they most keenly feel their emptiness. The blurting of the truth is an act of self-rescue. Possessed of minimal self-knowledge, they have a scant awareness of the suffering stemming from the spirit.

> "Truth sir, is a cow which will yield skeptics no more milk: so they have gone to milk the bull."
>
> —Samuel Johnson

Then there is the obsessed physician, meticulously addicted to a policy of dedicated honesty, who finds it incumbent upon him to convey every fact and every finding. This is possibly a legacy from his internship days when he feared the humiliation of overlooking some physical sign detected by the hawk-eyed vigilance of the resident or attending physician. Mayhap some subsequent consultant will embarrass him again by pointing out to his patient some abnormality he had not mentioned.

> "Her taste exact for faultless fact amounts to a disease."
>
> —W. S. Gilbert, *The Mikado*

Another physician will dispense truth out of a process of psychologic projection. Wrestling with indifferent success against his own weakness, he may display greater vigor in combatting the temptations of his patients. He will prescribe rigid regimens where such regimens will add at best a few tortured weeks or days to the existence of his patient. More candid indeed was that physician, who having forbidden his cardiac patient indulgence in tobacco, alcohol, and

amorous intimacies, was asked by his victim, "Tell me, doctor, if I give these things up will I live longer?" To which his physician replied, "No, but it will seem longer!"

> "The truth you speak doth lack gentleness and time to speak it in; you rub the sore when you should bring the plaster."
>
> —Shakespeare, *The Tempest*

Basically, two attitudes prevail in the matter of truth and cancer: to tell all or to tell nothing. Statistics are furnished by exponents of the former policy purporting to prove the soundness of their position. Yet any mature physician can relate episodes proving their limited value and significance. There is the documented story about a well known urological surgeon who was hospitalized for a hypernephroma, which diagnosis was withheld from him. One day he confided in the intern, explaining that as a mature man and experienced surgeon there was no reason he should not be told the truth. The intern blurted out the ominous diagnosis, whereupon the surgeon—taking advantage of the momentary absence of the nurse—leapt to his death. The aim of a fixed policy must be aimed not at some patients, but at all patients, and an occasional failure condemns the entire policy. The converse are those who practice not telling, and in so doing often deal in anxiety-provoking evasion and subterfuge. "You have got a bad tumor," they hint, becoming naively irascible if the word "cancer" is mentioned.

The truth of the matter—with due apologies for the phrase—would indicate there can be no policy at all, for a policy implies uniformity and, uniformity is a distillate of indolence and insensitivity which have no place in the practice of medicine. There is no other way. The doctor must know his patient. A humane physician, devoting as much time to the patient as the lesion, can often discern a proper course of action. Patients often provide broad hints they do not want to know. A 63-year-old lady, suffering from rectal cancer, delayed consulting a physician for five months after the onset of rectal bleeding, explaining later that she thought it was her menstrual flow. She was making it abundantly clear that she was unwilling to face reality, and that when confronted by the unpleasant and fearsome, she was quite capable of dealing successfully with them through a process of denial. She was indeed proclaiming, "I don't want to know." On the other hand, I have currently a patient who had a radical mastectomy, and her surgeon in full agreement with her children, had failed to tell her the true diagnosis of carcinoma with metastases. They were wrong, for the patient—who is a sensitive and perceptive person — felt herself surrounded by duplicity and evasion, and was assailed by uncertainty and doubt. She became depressed and agitated. Only after she learned the truth did her spirits regain their former bouyancy, for then she knew with what she had to come. She could fight against an identified foe.

Doctor L. K. Henderson, writing on the issue of truth, observed, "The idea that the truth, the whole truth, and nothing but the truth can be conveyed to the patient is an example of a false abstraction of that fallacy called by Whitehead 'The fallacy of misplaced concreteness'." It results from neglecting factors that cannot be excluded from the concrete situation and that have an effect that cannot be neglected. Another fallacy also is involved; the belief that it is not too difficult to know the truth. But of this I will not speak further.

I beg that you will not suppose that I am recommending, for this reason, that you should always lie to your patients. Such a conclusion from what I have said would correspond roughly to a class of fallacies that I have already referred to above. Since telling the truth is impossible, there can be no sharp distinction between what is true and what is false. But surely that does not relieve the physician of his moral responsibility. On the contrary, the difficulties that arise from the immense complexity of the phenomena do not diminish, but rather increase the moral responsibility of the physician, and one of my objects has been to describe the facts through which the nature of that moral responsibility is determined.

Far older than the precept, "The truth, the whole truth, and nothing but the truth," is another that originates within our profession and that has always been the guide

of the best physicians—and if I may venture a prophecy—will always remain so: "So far as possible, 'Do no harm'." You can do harm by the process of telling the truth. You can do harm by lying. In your relation with patients you will inevitably do much harm, and this will be by no means confined to your strictly medical blunders. It will arise from what you say and fail to say. But try to do as little harm as possible, not only in treatment with drugs, or with the knife, but also in treatment with words, with the expression of your sentiments and emotions. Try at all times to act upon the patient so as to modify his sentiments to his own advantage, and remember that, to this end, nothing is more effective than the belief that you are concerned wholeheartedly and exclusively for his welfare.

"A prime need is the early development of a strong patient-physician relationship."

—Stewart Wolf

"It is the physician's privilege to cure seldom, relieve often, and to comfort always."

—Oliver Wendell Holmes

FACULTY NEWS

Ross Pediatric Conference Held

A Ross Pediatric Research Conference on neurology, developed by the Department of Pediatrics at the University of Oklahoma School of Medicine, was held April 11-13 at the University of Oklahoma Center for Continuing Education in Norman. It dealt specifically with the degenerative diseases of infancy and childhood.

Approximately 50 well-known investigators in pediatrics and pediatric neurology from all parts of the country were invited participants in the limited registration program. One clinical session was conducted at Children's Memorial Hospital.

The Ross Conferences, sponsored annually by Ross Laboratories of Columbus, Ohio, are widely recognized for their excellence and the Proceedings are regarded as standard references in pediatrics and related disciplines.

Purpose of the Conferences was to present recent advances in a particular field of medicine, to encourage an exchange of ideas, and to stimulate additional research. A corollary purpose was to disseminate the results of the Conference to practicing physicians and other investigators for whom the material is pertinent.

"The Department of Pediatrics felt quite honored to have been invited to conduct such a conference," said Harris D. Riley, M.D., department head. Doctor Riley and J. T. Jabour, M.D., assistant professor af pediatrics and neurology, were program chairmen.

Session chairmen included Philip R. Dodge, M.D., pediatric neurologist, Massachusetts General Hospital, Boston; Richard Masland, M.D., director, National Institute of Neurological Diseases and Blindness, Bethesda, Maryland; Douglas Buchanan, M.D., professor of pediatrics and neurology, University of Chicago School of Medicine, Chicago; and David Clark, M.D., pediatric neurologist, Johns Hopkins University Hospital, Baltimore, Maryland. □

Heart Patient Course Presented

A heart patient course, dealing with various problems in congenital and rheumatic heart disease, coronary artery disease and strokes, was held April 11 and 12 in conjunction with the Wednesday postgraduate short course on hypertension at the University of Oklahoma Medical Center.

The guest lecturers were John H. Moyer, M.D., chairman of the Department of Medicine, Hahnemann Medical College and Hospital, Philadelphia; J. Edwin Wood, III, M.D., associate professor of medicine and director of the GHA Laboratory for Cardiovascular Research, Medical College of Georgia, and A. C. Corcoran, M.D., clinical investigator at St. Vincent's Charity Hospital, Cleveland, Ohio.

The program was developed by the Department of Medicine and Postgraduate Office at the Medical Center, Oklahoma State Heart Association and the State Department of Health. □

ABSTRACTS

ENDOTOXIN SHOCK

A series of ingenious experiments were performed by Hinshaw* and his associates to clarify certain aspects of shock induced by bacterial endotoxin. Measurements of arterial and small vein pressures were obtained in severed dog legs perfused by means of a pump circuit loaded with heparinized homologous blood.

Injection of endotoxin into this circuit produced only minimal and transitory effects. When, however, an anesthetized dog was also incorporated into the circuit profound vascular changes were observed, apparently as a result of humoral substances produced by the dog in response to the endotoxin.

Although both pressor and depressor substances were elaborated by the animal, the ultimate effect was a generally lowered vascular pressure on the arterial side of the capillary bed, and a sustained elevation of small vein pressure on the other which resulted in a hydrostatic edema of the leg.

Addition of such commonly used pressor drugs as epinephrine or nor-epinephrine produced only a small degree of arterial constriction, but effected a greater and more prolonged small vein constriction aggravating the shock-like state already present.

(**Reviewer's Note:** The results of these experiments have a very practical and important application for the physician treating a patient having a Gram-negative septicemia. The appearance of shock in such a patient may be due to endotoxin arising from these bacteria, and the proper treatment of this type of shock calls for the use of steroids, rather than the usual pressor drugs.)

*Hinshaw, L. B., Vick, J. A., Jordan, M. M., and Wittmers, L. E.: Vascular Changes Associated with Development of Irreversible Endotoxin Shock. American Journal of Physiology 202: 103-110 (January) 1962.

RECURRENT PYELONEPHRITIS

The occurrence of anomolous renal blood vessels as a cause of hydronephrosis and pyelitis is exemplified by the case of a five-year-old girl who was seen by her physician because of recurring bouts of fever and pain in the left loin.*

An excretory urogram showed enlargement of the left renal pelvis and calyces. Ureteral catheterization demonstrated that the urine from the right kidney was clear, while that from the left was cloudy and pus laden. Retrograde urograms showed a constriction of the left ureter just below the renal pelvis.

At laparotomy, the constriction was found to be due to compression of the ureter by an aberrant artery going to the lower pole of the left kidney. Ligation and division of the artery promptly relieved the obstruction, and postoperative follow-up studies showed progressive improvement in renal function with no further attacks of the illness over a two-year period.

The anatomic and physiologic factors which must be considered in selecting the proper surgical correction of this relatively common anomaly (4-6 per cent of all kidneys) are logical and can be readily determined by the surgeon at the time of operation.

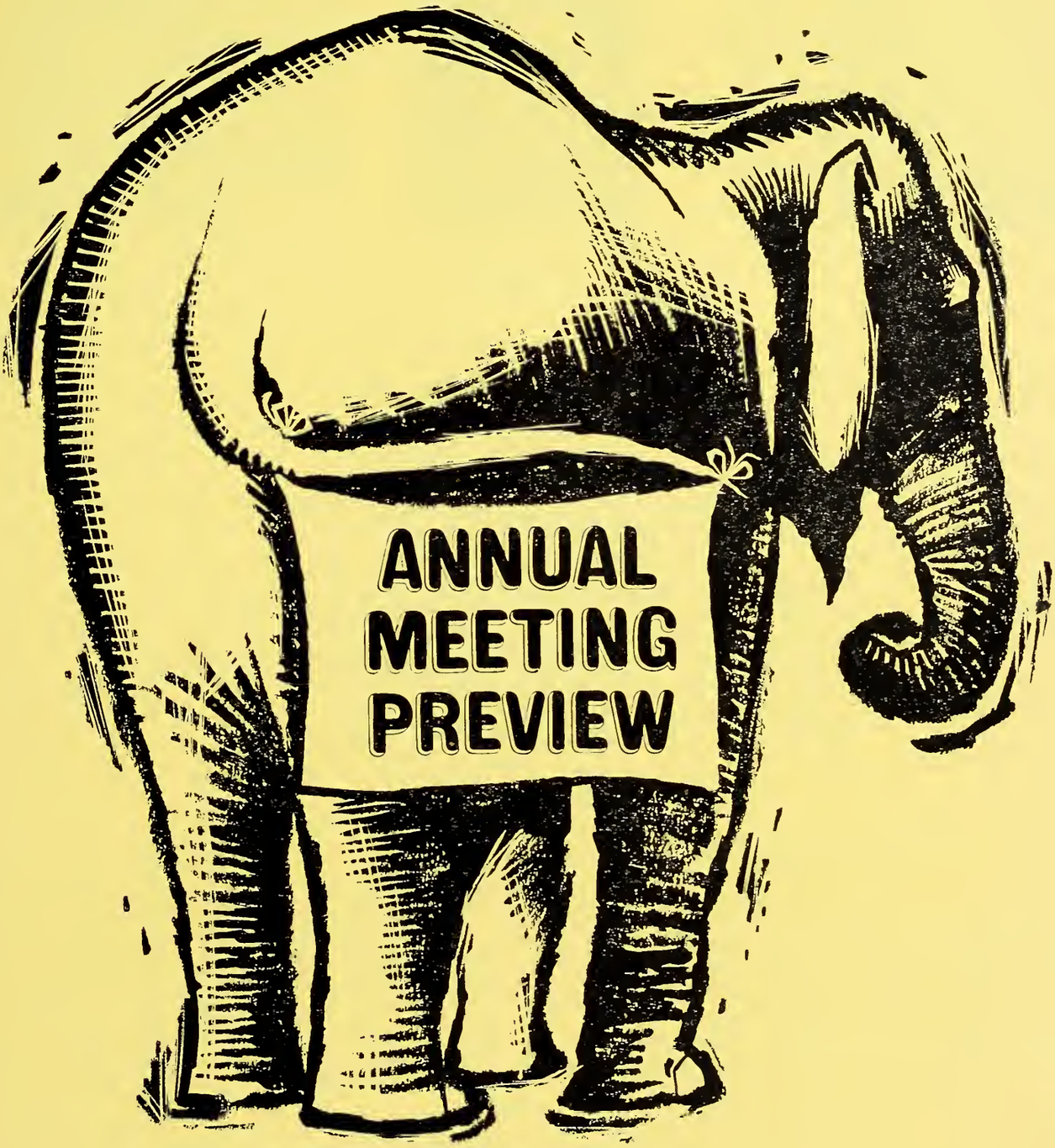
(**Reviewer's Note:** The importance of a careful study to determine predisposing factors in a patient having recurrent pyelonephritis cannot be overestimated. With mounting evidence of the persistence of this disease in the face of prolonged antibiotic and chemotherapy, no opportunity to permanently eradicate such factors should be overlooked.)

*Lachman, Ernest: Anatomy as Applied to Clinical Medicine. The New Physician 11: 30-31 (January) 1962.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

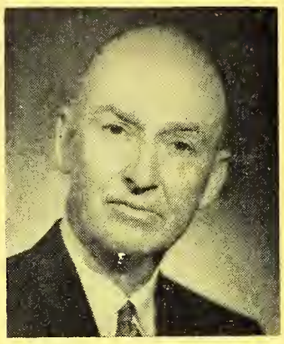
1. Anglin, J. R., Jr., Bever, A. T., Everett, M. A., and Lamb, J. H.: Ultraviolet Light-Induced Alterations in Urocanic Acid. Biochimica et Biophysics Acta **53**: 408, 1961.
2. McCay, P. B., Kitabchi, A. E., Caputto, R., and Trucco, R. E.: Inhibition of Succinoxidase by L-Gulonolactone Oxidase in Liver Preparations From Tocopherol-Deficient Rats. Biochemical and Biophysical Research Communications **4**: 469, 1961.
3. Pritchow, A. L. and Lhotka, J. F.: The Histochemical Detection of Thallium. Stain Technology **36**: 293, 1961.
4. Schilling, J. A., Shurley, H. M., Joel, W., Richter, K. M., and White, B. N.: Fibrocollagenous Tubes Structured in Vivo. Archives of Pathology **71**: 548, 1961.
5. Overbeck, H. W., Molnar, J. I., and Haddy, F. J.: Resistance to Blood Flow Through the Vascular Bed of the Dog Forelimb. Local Effects of Sodium, Potassium, Calcium, Magnesium, Acetate, Hypertonicity and Hypotonicity, American Journal of Cardiology **8**: 533, 1961.
6. Menguy, R. and Mings, H.: Role of Pancreatic and Biliary Juices in Regulation of Gastric Secretion: Pathogenesis of the Mann-Williamson Ulcer. Surgery **50**: 662, 1961.
7. Rader, L. E., Jr., Keith, H. B., and Campbell, G. S.: Mechanisms of Hypotension Following Release of Abdominal Aorta Clamp. Surgical Forum **12**: 265, 1961.

Reprints of the above publications are usually available on request from the senior author.

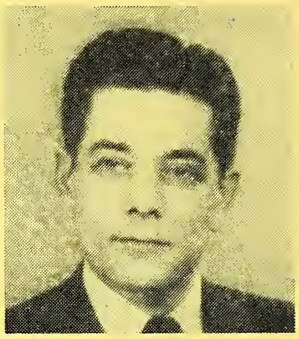

ANNUAL
MEETING
PREVIEW

Oklahoma State Medical Association

Clinton Gallaher, M.D.
Shawnee
President



J. Hoyle Carlock, M.D.
Ardmore
President-Elect



Mark R. Johnson, M.D.
Oklahoma City
Secretary-Treasurer

OFFICERS

President—Clinton Gallaher, M.D., Shawnee
President-Elect—J. Hoyle Carlock, M.D., Ardmore
Vice-President—Peter E. Russo, M.D., Oklahoma City
Secretary-Treasurer—Mark R. Johnson, M.D., Oklahoma City
Past-President—Alfred T. Baker, M.D., Durant
Past-President—Walter E. Brown, M.D., Tulsa
Delegate to the A.M.A.—Wilkie D. Hoover, M.D., Tulsa
Alternate Delegate to the A.M.A.—Joe L. Duer, M.D., Woodward
Delegate to the A.M.A.—Malcom E. Phelps, M.D., El Reno
Alternate Delegate to the A.M.A.—Thomas C. Points, M.D., Oklahoma City
Speaker of the House of Delegates—Marshall O. Hart, M.D., Tulsa
Vice-Speaker—C. M. Hodgson, M.D., Kingfisher
Editor-in-Chief—Ben H. Nicholson, M.D., Oklahoma City

TRUSTEES

District 1: Craig, Delaware, Mayes, Nowata, Ottawa, Rogers, Washington
Trustee (1962)_____J. E. Highland, M.D., Miami
Trustee (1962)_____L. B. Word, M.D., Bartlesville

District 2: Kay, Noble, Osage, Pawnee, Payne
Trustee (1963)_____A. M. Evans, M.D., Perry
Trustee (1963)_____G. B. Gathers, Jr., M.D., Stillwater

District 3: Garfield, Grant, Kingfisher, Logan
Trustee (1964)_____James Petty, M.D., Guthrie
Trustee (1964)_____Avery B. Wight, M.D., Enid

District 4: Alfalfa, Beaver, Cimarron, Ellis, Harper, Major, Texas, Woods, Woodward
Trustee (1962)__Walter H. Dersch, Jr., M.D., Shattuck
Trustee (1962)_____John X. Blender, M.D., Cherokee

District 5: Beckham, Blaine, Canadian, Custer, Dewey, Roger Mills
Trustee (1963)_____Ross Deputy, M.D., Clinton
Trustee (1963)_____C. Riley Strong, M.D., El Reno

District 6: Oklahoma
Trustee (1964) Vernon D. Cushing, M.D., Okla. City
Trustee (1964)_____E. E. Shircliff, M.D., Okla. City

District 7: Cleveland, Creek, Lincoln, Okfuskee, Pottawatomie, Seminole, McClain
Trustee (1962)_____Francis Davis, M.D., Shawnee
Trustee (1962)_____E. K. Norfleet, M.D., Bristow

District 8: Tulsa
Trustee (1963)_____Wendell L. Smith, M.D., Tulsa
Trustee (1963)_____Earl M. Lusk, M.D., Tulsa

District 9: Adair, Cherokee, McIntosh, Muskogee, Okmulgee, Sequoyah, Wagoner
Trustee (1964)_____F. R. First, Jr., M.D., Checotah
Trustee (1964)_____Burdge F. Green, M.D., Stilwell

District 10: Haskell, Hughes, Latimer, LeFlore, Pittsburg
Trustee (1962)_____Thurman Shuller, M.D., McAlester
Trustee (1962)_____C. E. Lively, M.D., McAlester

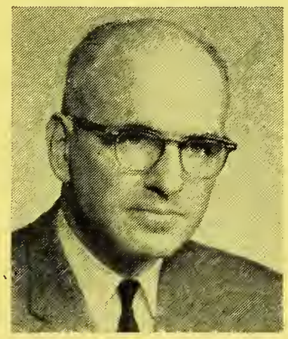
District 11: Atoka, Bryan, Choctaw, Coal, McCurtain, Pushmataha
Trustee (1963)_____W. A. Hyde, M.D., Durant
Trustee (1963)_____Thomas E. Rhea, M.D., Idabel

District 12: Carter, Garvin, Johnston, Love, Marshall, Murray, Pontotoc
Trustee (1964)_____E. M. Gullatt, M.D., Ada
Trustee (1964)____M. E. Robberson, M.D., Wynnewood

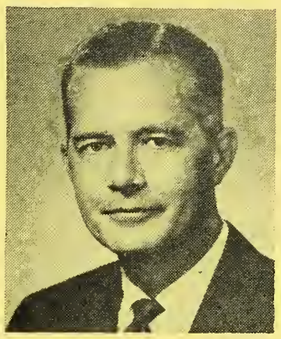
District 13: Caddo, Comanche, Cotton, Grady, Jefferson, Stephens
Trustee (1962)_____John B. Miles, M.D., Anadarko
Trustee (1962)_____W. R. Cheatwood, M.D., Duncan

District 14: Greer, Harmon, Jackson, Kiowa, Tillman, Washita
Trustee (1963)_____J. B. Hollis, M.D., Mangum
Trustee (1963)_____R. R. Hannas, M.D., Sentinel

ANNUAL MEETING COMMITTEES



J. R. Stacy, M.D.
General Chairman



Rex E. Kenyon, M.D.
Program Chairman

SCIENTIFIC WORKS COMMITTEE

Rex E. Kenyon, M.D., *Chairman*
Robert D. Anspaugh, M.D.
Theodore R. Wenger, M.D.
Marcus S. Barker, M.D.
Mark A. Everett, M.D.
Bert F. Keltz, M.D.
Robert W. King, M.D.
Samuel T. Moore, M.D.
James W. Murphree, M.D.
Joe M. Parker, M.D.
G. R. Russell, M.D.
William T. Snoddy, M.D.
John R. Stacy, M.D.
Robert T. Sturm, M.D.
Donald D. Albers, M.D.
Hays R. Yandell, M.D.

TECHNICAL EXHIBITS COMMITTEE

Robert Sukman, M.D., *Chairman*
John W. DeVore, M.D.
Raymond F. Hain, M.D.
Jack V. Hough, M.D.

SOCIAL AND SPORTS EVENTS COMMITTEE

John D. Ingle, M.D., *Chairman*
Joseph W. Funnell, M.D.
Peter E. Russo, M.D.
Hugh A. Stout, M.D.

PRESS AND PUBLICITY COMMITTEE

Stanley R. McCampbell, M.D., *Chairman*
Irwin H. Brown, M.D.
Elmer Ridgeway, Jr., M.D.
Cecil R. Stansberry, M.D.

ACKNOWLEDGMENT

Special appreciation is extended to the following, who made valuable contributions to the planning of portions of the program: Raymond J. Dusek, James D. Foliart, LL.B., and Roy C. Lytle, LL.B.

DIGEST OF EVENTS

HOTEL ACCOMMODATIONS

The entire Annual Meeting will be quartered in the Skirvin and Skirvin Tower Hotels, Oklahoma City, where a large block of rooms has been reserved for members of the Oklahoma State Medical Association. Physicians are requested to make their own reservations by writing directly to the Skirvin *Hotel,* Broadway and Park Avenue, Oklahoma City—providing the hotel with dates and times of arrival and departure. Other excellent downtown hotel accommodations may be made with the Sheraton-Oklahoma Hotel, 228 West Sheridan, or the Huckins, 20 North Broadway.

GENERAL REGISTRATION

Registration will open Saturday, May 5, at 12 Noon (Scientific Program begins at 2:00 p.m.) on the second floor of the Skirvin *Hotel.* Delegates may register, both for the House of Delegates meeting and the scientific sessions, at a special registration desk located outside the door of the Persian Room, Skirvin *Tower* Hotel, beginning at 9:00 a.m. Saturday, May 5.

BOARD OF TRUSTEES

The OSMA's Board of Trustees will meet Friday, May 4th, in the Venetian Room of the Skirvin *Hotel,* beginning at 1:30 p.m.

HOUSE OF DELEGATES

The House of Delegates will meet on Saturday, May 5th, at 10:00 a.m. in the Persian Room of the Skirvin *Tower.* The House will recess for reference committee hearings at the close of the first session, and will reconvene at an hour to be announced by the Speaker.

SCIENTIFIC, SOCIO-ECONOMIC SESSIONS

There will be three separate meeting rooms of the Skirvin *Hotel* in operation for the scientific and socio-economic sessions. In the Venetian Room (14th floor), a general-interest scientific program will begin at 2:00 p.m. Saturday, May 5th, and will continue through until 5:00 p.m. Monday, May 7th. In the Regency and Monterey Rooms (2nd floor), special-interest programs (scientific and socio-economic) will commence at 2:00 p.m. Saturday, May 5th, continuing through until noon, May 7th. The Oklahoma Eye Bank will present movies in the Monterey Room, Monday afternoon at 1:30 p.m.

As an added extra to the scientific program, the Oklahoma Chapter of the American College of Chest Physicians will cosponsor with the OSMA a Saturday evening session on cardiorespiratory diseases entitled, "Fireside Conferences." These conferences, preceded by a dinner meeting, will be held in the Venetian Room at 8:15 p.m., May 5th.

A complete program of all scientific and socio-economic sessions appears elsewhere in this *Journal.*

LUNCHEON

Physicians and guests are invited to hear four outstanding authorities on Americanism and Citizenship present their views at

a special seminar-luncheon scheduled for Sunday, May 6th, at 12:30 p.m. in the Emerald Room of the Huckins Hotel. The Huckins is located a short block from the Skirvin. Tickets are $2.25, available at the general registration desk, Skirvin Hotel.

TECHNICAL EXHIBITS

Forty-seven displays by firms offering products and services of interest to Oklahoma physicians may be seen on the second and fourteenth floors of the Skirvin *Hotel*, adjacent to the two meeting-room areas. Exhibit hours are 12:00 to 5:00 p.m. Saturday, 8:30 a.m. to 5:00 p.m. Sunday and Monday (second floor exhibits will close at noon Monday).

HEART-CHECK STATION

The Oklahoma State Heart Association, in cooperation with the O.U. Medical Center, will operate a Heart-Check Station in the fourteenth floor technical exhibit area. Chest films, electrocardiograms and stethoscopic examinations will be offered free to all OSMA members. In addition, the Heart Association will have its new "Heart Sounds" exhibit in operation on the fourteenth floor.

HOBBY SHOW

Sponsored by the Woman's Auxiliary, the Doctor's Hobby Show will display the crafts and hobbies of Oklahoma physicians and wives. This popular feature of the Annual Meeting may be seen Saturday through Monday, May 5-7, in the technical exhibits area, fourteenth floor of the Skirvin *Hotel*. A lounge and coffee bar will be available in the same area.

GOLF TOURNAMENT

OSMA's Annual Golf Tournament will be played Monday afternoon, May 7th, at the beautiful Oklahoma City Golf and Country Club. The greens fee is $5.00 per person, tee off at 12:00 noon. Trophies will be presented Monday evening at the Inaugural Dinner-Dance.

PAST-PRESIDENTS' BREAKFAST

The Annual Past-Presidents' Breakfast will be held at 7:30 a.m. Monday, May 7th, at the Oklahoma Medical Research Foundation, 825 Northeast 13th, Oklahoma City.

SOCIAL EVENTS

On Sunday, May 6th, a "Night in the Tropics Party" will be held at the Faculty House, 601 Northeast 14th Street, Oklahoma City, beginning at 6:30 p.m. All physicians and wives are invited to attend. Featuring a buffet dinner, music, orchids for the ladies, and casual dress.

On Monday, May 7th, the President's Inaugural Dinner-Dance will be held in the Skirvin *Tower's* Persian Room at 7:30 p.m. preceded at 6:30 p.m. by a social hour in the Skirvin *Hotel's* Venetian Room. During the inaugural dinner, physicians and wives will hear an address by Senator Robert S. Kerr. Following inaugural ceremonies, dancing will begin at 9:00 p.m. to the music of the Billy May Orchestra.

MEDICAL EXAMINERS

The State Board of Unexplained Deaths will conduct a dinner meeting for county medical examiners, deputies and enforcement officials at the Huckins Hotel on Sunday, May 6th, beginning at 6:00 p.m. Doctor LeMoyne Snyder and Doctor Harold Beddoe, Forensic Pathologists, will present the program. Tickets are $3.50.

AUXILIARY MEETING

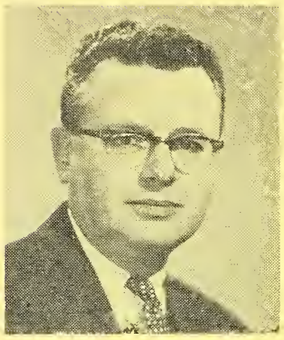
The Woman's Auxiliary to the Oklahoma State Medical Association will meet May 4-7 in the Skirvin and Huckins Hotels. A full program appears elsewhere in this *Journal*.

Physicians' wives are especially invited to attend OSMA section meetings on "Americanism" and "Investments and Estate Planning," scheduled for the Skirvin's Monterey Room, on the mornings of May 6th and 7th, respectively.

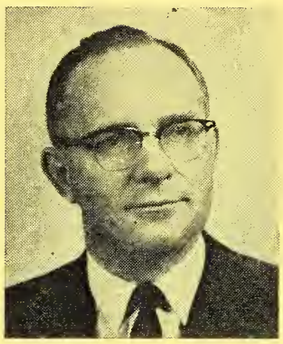
OMPAC

All physicians and wives who are members (or who are interested in becoming members) of the Oklahoma Medical Political Action Committee are invited to attend a meeting of the group on Sunday, May 6th, in the Skirvin Hotel's Monterey Room, beginning at 5:30 p.m. Milton Davis, M.D., Dallas, Texas, Secretary-Treasurer of AMPAC, will be the guest speaker.

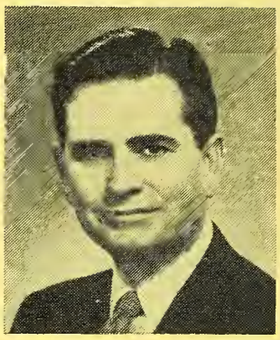
Distinguished Guest Speakers



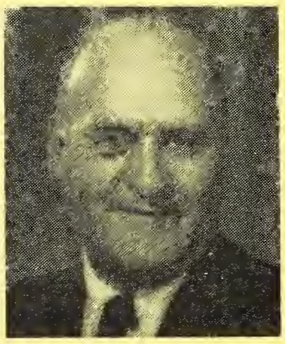
ROBERT A. ALDRICH, M.D.
Pediatrics
Seattle, Washington
Professor and Executive Officer, Department of Pediatrics, University of Washington School of Medicine



WILLIAM N. BRET, JR., LL.B
Dallas, Texas
Vice-President, Arthur Stedry Hansen Consulting Actuaries, Dallas



JAMES D. FOLIART, LL.B.
Oklahoma City
Partner, Firm of Foliart, Shepard and McPherren, Oklahoma City



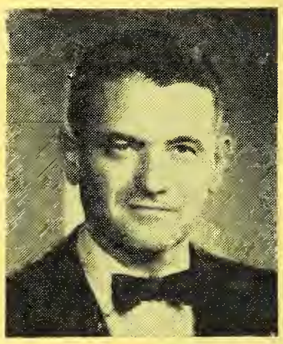
IRVING M. ARIEL, M.D.
Surgery
New York City
Attending Surgeon, Pack Medical Group; Associate Professor of Clinical Surgery, New York Medical College

CLAUDE C. CRAIGHEAD, M.D.
Surgery
New Orleans, Louisiana
Surgeon, Browne-McHardy Clinic, New Orleans; Clinical Associate Professor of Surgery, LSU School of Medicine

ALFRED GOLDMAN, M.D.
Internal Medicine
St. Louis, Missouri
Associate Professor of Clinical Medicine, Washington University School of Medicine

REV. RAYMOND A. ARMSTRONG
Oklahoma City
Ordained minister, Christian Church; Executive Secretary, Oklahomans For Right-To-Work

JAMES H. FERGUSON, M.D.
Obstetrics-Gynecology
Miami, Florida
Professor and Chairman, Department of Obstetrics-Gynecology, University of Miami School of Medicine



WILLARD E. GOODWIN, M.D.
Urology
Los Angeles, California
Professor of Surgery and Chief of the Division of Urology, University of California Medical Center

ROBERT F. HUSTEAD, M.D.

Anesthesiology
Kansas City, Kansas

Assistant Professor of Surgery (Anesthesiology), University of Kansas Medical Center

ROBERT R. KIERLAND, M.D.

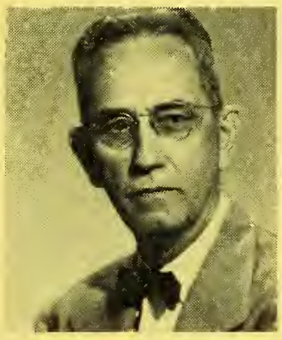
Dermatology
Rochester, Minnesota

Consulting Physician, Mayo Clinic; Professor of Dermatology, Mayo Foundation Faculty, University of Minnesota

L. J. McCORMACK, M.D.

Pathology
Cleveland, Ohio

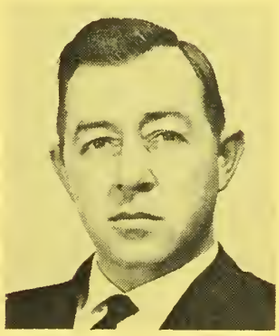
Staff Pathologist, Cleveland Clinic, Cleveland, Ohio



HOLLIS E. JOHNSON, M.D.

Internal Medicine
Nashville, Tennessee

Emeritus Professor of Clinical Medicine, Vanderbilt University; President, American College of Chest Physicians



ROBERT E. LEE, LL.B.

Oklahoma City

Vice-President, The First National Bank and Trust Company, Oklahoma City

H. C. MARSH, LL.B.

Bartlesville, Oklahoma

Director, Public Affairs Division, Phillips Petroleum Company, Bartlesville.

HOWARD E. KERSHNER, L.H.D.

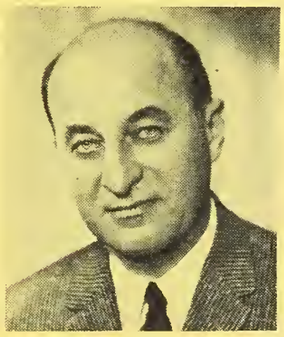
New York City

President, Christian Freedom Foundation, Inc., New York; Publisher, Christian Economics

ROY C. LYTLE, LL.B.

Oklahoma City

Senior Partner, Lytle, Soulé and Emery, OSMA Legal Counsel, Oklahoma City

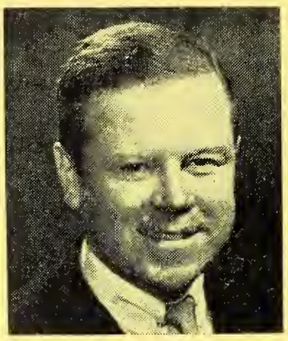


EDWARD MASSIE, M.D.

Internal Medicine
St. Louis, Missouri

Associate Professor of Clinical Medicine, Washington University School of Medicine

WILLIAM F. MILLER, M.D.
Internal Medicine
Dallas, Texas
Assistant Professor of Medicine, University of Texas, Southwestern Medical School



ROBERT MORRIS, LL.B.
Dallas, Texas
President, University of Dallas, Dallas, Texas; Author of "No Wonder We Are Losing"

CHARLES L. THOMPSON
Oklahoma City
Account Executive, Merrill Lynch, Pierce, Fenner and Smith, Oklahoma City

HERMAN J. MOERSCH, M.D.
Internal Medicine
Rochester, Minnesota
Emeritus Professor of Medicine, Mayo Foundation, University of Minnesota; Past-President, American College of Chest Physicians

MALCOLM H. STROUD, M.D.
Otolaryngology
St. Louis, Missouri
Assistant Professor in Otolaryngology, Washington University School of Medicine, St. Louis

WILLIAM L. WISE, LL.B.
Oklahoma City
Account Executive, Merrill Lynch, Pierce, Fenner and Smith, Oklahoma City

ANNUAL MEETING

TELEPHONE MESSAGE CENTER

While you are attending the Annual Meeting, your emergency calls may be referred to

CE 2-0087

Saturday Afternoon, May 5, 1962

GENERAL INTEREST PROGRAM—Venetian Room, Skirvin
Richard A. Clay, M.D., Oklahoma City, Presiding

2:00 p.m. THE PANORAMA OF NEEDLE BIOPSY
Lawrence J. McCormack, M.D., *Cleveland, Ohio*

2:40 p.m. A GENERAL APPRAISAL OF CANCER CHEMOTHERAPY
Irving M. Ariel, M.D., *New York City*

3:20 p.m. Intermission—Visit Exhibits

3:40 p.m. MANAGEMENT OF THIRD TRIMESTER BLEEDING
James H. Ferguson, M.D., *Miami, Florida*

4:20 p.m. A RE-EVALUATION OF THE USES OF NITROUS OXIDE IN OBSTETRICS
Robert F. Hustead, M.D., *Kansas City, Kansas*

SPECIAL INTEREST—UROLOGY—Regency Room, Skirvin
Donald D. Albers, M.D., Oklahoma City, Presiding

2:00 p.m. THE USE OF THE ILEUM IN UROLOGY
Willard E. Goodwin, M.D., *Los Angeles, California*

2:30 p.m. PRESENTATION OF PROBLEM CASES OF ILEAL DIVERSION—DISCUSSION
Doctor Goodwin, *Discussant*

3:00-

5:00 p.m. PYELOGRAM CONFERENCE
Doctor Goodwin, *Discussant*

SPECIAL INTEREST—TAX AND LEGAL PROBLEMS—Monterey Room, Skirvin
Wm. N. Harsha, M.D., Oklahoma City, Presiding

2:00 p.m. PROBLEMS IN PROFESSIONAL LIABILITY
James D. Foliart, LL.B., *Oklahoma City*

3:30-

5:00 p.m. THE PROFESSIONAL CORPORATION ACT
Roy C. Lytle, LL.B., *Oklahoma City*

Saturday Evening, May 5, 1962

SPECIAL INTEREST—CARDIORESPIRATORY DISEASES*—Venetian Room, Skirvin

**Presented Jointly by the OSMA and the Oklahoma Chapter, American College of Chest Physicians*

6:00 p.m. DINNER (All OSMA members invited—$5 per person)

7:00 p.m. *Panel:* MANAGEMENT OF THE CARDIOPULMONARY CRIPPLE
Moderator: Herman J. Moersch, M.D., *Rochester, Minnesota*
Panelists: Alfred Goldman, M.D., *St. Louis*
Hollis E. Johnson, M.D., *Nashville*
Edward Massie, M.D., *St. Louis*
William F. Miller, M.D., *Dallas*

SATURDAY EVENING—(Continued)

8:15 p.m. FIRESIDE CONFERENCES
(Beer and Soft Drinks Served)

Conference Subjects:
- Management of Emphysema
- Treatment of Coronary Disease
- Modern Treatment of Tuberculosis
- Treatment of Hypertension
- Rheumatic Heart Disease
- Bronchogenic Carcinoma

Sunday Morning, May 6, 1962

GENERAL INTEREST PROGRAM—Venetian Room, Skirvin
Peter E. Russo, M.D., Oklahoma City, Presiding

9:00 a.m. THE USE OF RADIOACTIVE ISOTOPES—TREATMENT OF INOPERABLE CANCER
Irving M. Ariel, M.D., *New York City*

9:40 a.m. BIG, LITTLE GLANDS, THE PARATHYROIDS, PROBLEMS IN DIAGNOSIS AND NEWER CONCEPTS OF FUNCTION
Leonard P. Eliel, M.D., *Oklahoma City*

10:20 a.m. Intermission—Visit Exhibits

10:40 a.m. CONSIDERATION OF NEW DEVELOPMENTS IN RESUSCITATION OF THE NEWBORN
Robert F. Hustead, M.D., *Kansas City, Kansas*

11:20 a.m. ETIOLOGIC FACTORS IN HYPERTENSION
Lawrence J. McCormack, M.D., *Cleveland, Ohio*

SPECIAL INTEREST—OBSTETRICS—GYNECOLOGY—Regency Room, Skirvin
Charles D. Bodine, M.D., Oklahoma City, Presiding

9:00 a.m. TRUE HERMAPHRODITISM
John E. Ramsey, M.D., *Oklahoma City*

9:20 a.m. POST PARTUM BLADDER
Joseph W. Funnell, M.D., *Oklahoma City*

9:40 a.m. RUPTURED UTERI
Guy Fuller, M.D., *Oklahoma City*

10:00 a.m. Intermission—Visit Exhibits

10:30 a.m. PANEL DISCUSSION
Cesarean Section

SPECIAL INTEREST—AMERICANISM—Monterey Room, Skirvin
Edgar W. Young, Jr., M.D., El Reno, Presiding

9:00 a.m. THE MORAL BASIS OF A FREE SOCIETY
Howard E. Kershner, L.H.D., *New York City*

9:45 a.m. EXTENSION OF FREEDOM SHOULD REPLACE RETREAT
Robert Morris, LL.B., *Dallas, Texas*

10:30 a.m. Intermission—Visit Exhibits

10:40 a.m. THE TWENTIETH CENTURY CATASTROPHE
Rev. Raymond A. Armstrong, *Oklahoma City*

11:20 a.m. THE PRIVATE PRACTICE OF POLITICS
H. C. Marsh, LL.B., *Bartlesville*

LUNCHEON-SEMINAR—Emerald Room, Huckins
John R. Stacy, M.D., Oklahoma City, Presiding

12:30 p.m. "Americanism"—Mssrs. Kershner, Morris, Armstrong and Marsh

Sunday Afternoon, May 6, 1962

GENERAL INTEREST PROGRAM—Venetian Room, Skirvin
Mark R. Johnson, M.D., Oklahoma City, Presiding

2:40 p.m. IMPACT OF VAGINAL CYTOLOGY ON MEDICAL PRACTICE
James H. Ferguson, M.D., *Miami, Florida*

3:20 p.m. THE GENERAL PRACTITIONER; THE SURGEON; THE UROLOGIST, AND THE PATIENT WITH ABDOMINAL PAIN
Willard E. Goodwin, M.D., *Los Angeles, California*

4:00 p.m. Intermission—Visit Exhibits

4:10 p.m. HYPOCHOLESTEREMIC AGENTS
Robert H. Furman, M.D., *Oklahoma City*

SPECIAL INTEREST—SURGERY—Regency Room, Skirvin
Joe M. Parker, M.D., Oklahoma City, Presiding

3:00-
5:00 p.m. SYMPOSIUM ON DIAGNOSIS AND TREATMENT OF LYMPHOMAS

1. Diagnosis and Prognosis
   Robert M. Bird, M.D., *Oklahoma City*
2. Interrelationships of Lymphomas and Leukemias
   Hazel L. McGaffey, M.D., *Oklahoma City*
3. Surgical Treatment of Localized Lymphomas
   Irving M. Ariel, M.D., *New York City*
4. Chemotherapy and Medical Management of Lymphomas
   Leonard P. Eliel, M.D., *Oklahoma City*

SPECIAL INTEREST—PATHOLOGY—Monterey Room, Skirvin
Henry T. Russell, M.D., Oklahoma City, Presiding

3:00 p.m. NEWER LABORATORY PROCEDURES AND THEIR SIGNIFICANCE
William T. Snoddy, M.D., *Oklahoma City*

3:30 p.m. SOURCES OF ERROR IN THE OFFICE AND SMALL HOSPITAL LABORATORIES
Jess D. Green, Jr., M.D., *Bartlesville*

4:00 p.m. BLOOD BANKING FOR SMALL HOSPITALS
DeWitt T. Hunter, M.D., *Oklahoma City*

4:30 p.m. THE CURRENT STATUS OF EXFOLIATIVE CYTOLOGY
Emil Palik, M.D., *Tulsa*

Monday Morning, May 7, 1962

GENERAL INTEREST PROGRAM—Venetian Room, Skirvin
Vernon D. Cushing, M.D., Oklahoma City, Presiding

9:00 a.m. THE ROLE OF SURGERY IN THE THERAPY OF THYROID DISEASE
Claude C. Craighead, M.D., *New Orleans, Louisiana*

9:40 a.m. TREATMENT OF COMMON DERMATOSES
Robert R. Kierland, M.D., *Rochester, Minnesota*

10:20 a.m. Intermission—Visit Exhibits

10:40 a.m. THE CLINICAL SIGNIFICANCE OF HYPERBILIRUBINEMIA IN INFANCY
Robert A. Aldrich, M.D., *Seattle, Washington*

11:20 a.m. THE DIZZY PATIENT AS SEEN BY AN OTOLARYNGOLOGIST
Malcolm H. Stroud, M.D., *St. Louis, Missouri*

MONDAY MORNING—(Continued)

SPECIAL INTEREST—MEDICINE—Regency Room, Skirvin
Bert F. Keltz, M.D., Oklahoma City, Presiding

9:00 a.m. CHEMOTHERAPY AND GENERAL CARE OF PATIENTS WITH NEOPLASTIC DISEASE
Leonard P. Eliel, M.D., and Paul T. Condit, M.D., *Oklahoma City*

10:00 a.m. CURRENT ASPECTS OF MULTIPLE MYELOMA
Robert C. Lawson, M.D., *Oklahoma City*

10:30 a.m. Intermission—Visit Exhibits

10:50 a.m. THE MANAGEMENT OF ACUTE HEMORRHAGIC PROBLEMS
John W. DeVore, M.D., *Oklahoma City*

SPECIAL INTEREST—INVESTMENTS AND ESTATE PLANNING—Monterey Room, Skirvin
L. J. Starry, M.D., Oklahoma City, Presiding

9:00 a.m. ESTATE PLANNING FOR THE MODERN PHYSICIAN
Robert E. Lee, LL.B., *Oklahoma City*

9:45 a.m. PENSION PLANS
William N. Bret, Jr., LL.B., *Dallas, Texas*

10:30 a.m. Intermission—Visit Exhibits

10:45 a.m. FUNDAMENTALS OF INVESTING IN SECURITIES
William L. Wise, LL.B., *Oklahoma City*

11:15 a.m. CURRENT OUTLOOK FOR THE SECURITIES MARKET
Charles L. Thompson, *Oklahoma City*

Monday Afternoon, May 7, 1962

GENERAL INTEREST PROGRAM—Venetian Room, Skirvin
Robert T. Sturm, M.D., Oklahoma City, Presiding

2:00 p.m. MUCOUS MEMBRANE LESIONS
Robert R. Kierland, M.D., *Rochester, Minnesota*

2:40 p.m. THE ENIGMATIC PORTAL HYPERTENSION
Claude C. Craighead, M.D., *New Orleans, Louisiana*

3:20 p.m. Intermission—Visit Exhibits

3:40 p.m. DIAGNOSIS AND CLINICAL MANAGEMENT OF NONSPECIFIC INFLAMMATORY LESIONS OF THE BOWEL IN CHILDHOOD
Robert A. Aldrich, M.D., *Seattle, Washington*

4:20 p.m. SOME UNUSUAL CASES OF VERTIGO
Malcolm H. Stroud, M.D., *St. Louis, Missouri*

MOVIE—Monterey Room, Skirvin
Charles A. Royer, M.D., Oklahoma City, Presiding

1:30 p.m. TECHNIQUE FOR ENUCLEATION OF DONOR EYES AND TECHNIQUES OF KERATOPLASTY

Technical Exhibitors

The Technical Exhibits at the 56th Annual Meeting of the Oklahoma State Medical Association will be located on the 2nd and 14th floors, adjacent to the meeting rooms. Displays will be featured by the following firms:

Abbott Laboratories

Audio-Digest Foundation

Ayerst Laboratories

Blue Cross and Blue Shield Plans of Oklahoma

Ciba Pharmaceutical Products, Inc.

Coca Cola Company

Connie's Prescription Shops

Credit Service, Inc.

Dictaphone Corporation

*Eli Lilly and Company

C. L. Frates Company

General Electric Company—X-Ray Department

Giegy Pharmaceuticals

J. E. Hanger, Inc.

Holland-Rantos Company, Inc.

Kay Pharmacal Company

J. A. Majors Company

Massachusetts Mutual Life Insurance Company

Mead Johnson and Company

Medco Products Company

Melton Company, Inc.

Merck, Sharpe & Dohme

Mid-Continent Surgical Supply Company

Mid-West Surgical Supply Company

Milex-Southern

Mutual Benefit Life Insurance Company

National Cash Register

Oklahoma Physicians Supply, Inc.

Ortho Pharmaceutical Corporation

Parke, Davis & Company

Pfizer Laboratories

Playtex International Latex Corporation

Plough Laboratories

R. J. Reynolds Tobacco Company

Rhinopto Company

Roche Laboratories

Saint Paul Fire and Marine Insurance Company

Sandoz Pharmaceuticals

G. D. Searle and Company

E. R. Squibb & Sons

Seven-Up Bottlers of Oklahoma

S. J. Tutag & Company

Warner-Chilcott Laboratories

X-Ray Copy Corporation

*Contributor to the Scientific Program

Related Meetings

American Academy of Pediatrics

The Oklahoma Chapter of the American Academy of Pediatrics will meet on May 6th in the Executive Suite of the Skirvin Hotel. Cocktails will be served at 6:30 p.m., followed by a dinner-program featuring Robert A. Aldrich, M.D., Seattle, Washington.

Oklahoma Society of Internal Medicine

Maxwell C. Berry, M.D., Kansas City, Missouri, president-elect of the American Society of Internal Medicine, will be the guest speaker when the state chapter of the group meets in the Huckins Hotel on May 6th. Cocktails are at 6:30 p.m. Wives are invited.

State Board of Unexplained Deaths

County medical examiners and their deputies are invited to hear Doctors LeMoyne Snyder and Harold Beddoe, outstanding pathologists in the medico-legal field. The dinner meeting will be held Sunday, May 6th, at the Huckins Hotel, starting at 6:00 p.m.

Oklahoma State Radiological Society

This group will meet at 6:00 p.m. in the Regency Room of the Skirvin Hotel, May 6th. Guest speaker is Willard E. Goodwin, M.D., Los Angeles.

American College of Surgeons

The Oklahoma Chapter will meet Sunday evening, May 6th, in the Venetian Room of the Skirvin Hotel. Cocktails will be served at 6:30 p.m., dinner at 7:30. Speaker for the event will be Warren D. Thomas, D.V.M., Director of the Oklahoma City Zoo, who will discuss and show films of Africa. College members and others with an interest in surgery are invited to attend with their wives. Tickets at $7.50 each may be purchased at general registration desk.

OMPAC

Members and prospective members of the Oklahoma Medical Political Action Committee are invited to attend a dinner meeting at 5:30 p.m., May 6th, in the Skirvin Hotel's Monterey Room. Featured speaker, Milton Davis, M.D., Dallas, national officer of the American Medical Political Action Committee.

International College of Surgeons

The Oklahoma Chapter of the International College of Surgeons will meet for lunch on Monday ,May 7th, in the Executive Suite of the Skirvin Hotel, beginning at 12:30 p.m.

Oklahoma Society of Dermatology

The Dermatology Clinic of the University Hospital will be the location of the state society's clinical meeting, to begin at 10:00 a.m. Sunday May 6th. Afterwards the dermatologists will honor the guest speaker, Robert Kierland, M.D., Rochester, Minnesota, at a dinner.

Oklahoma Society of Anesthesiology

Donald W. Benson, M.D., Baltimore, Maryland, will be the guest speaker when the state chapter of the group meets at the Twin Hills Country Club, May 6th. Registration will begin at 10:00 a.m. and lunch will be served at 12:30 (approximately $3.75 per person).

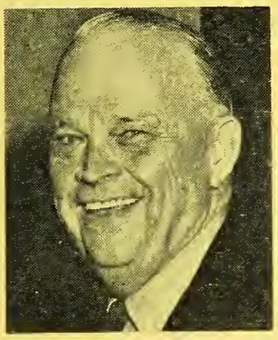
Oklahoma Section of the American College of Obstetrics and Gynecology

All interested OSMA members are invited to attend the 12:00 p.m. luncheon to be held Sunday, May 6th in Room D of the Skirvin Tower Hotel. James H. Ferguson, M.D., Miami, Florida, will be the guest speaker. Tickets ($3.00 per person) for the luncheon will be available at the registration table.

Oklahoma State Urological Association

This group will meet in Suite C on the 4th floor of the Skirvin Tower Hotel on May 5th from 9:00 a.m. until 12:30 p.m. In the afternoon, members of the society will convene as the section meeting on Urology, which is a part of the OSMA program, scheduled for the Regency Room of the Skirvin Hotel from 2:00 p.m. to 5:00 p.m. At 6:30 p.m. a social hour will be held in the Monterey Room, followed by a dinner meeting at 7:30 p.m.

PRESIDENT'S INAUGURAL DINNER-DANCE



KERR

LESTER

MONDAY, MAY 7, 1962

6:30 p.m.	Social Hour and Reception. Venetian Room, Skirvin *Hotel*
7:30 p.m.	Dinner and Inaugural Ceremonies, Persian Room, Skirvin *Tower* Hotel
8:30 p.m.	Address. Senator Robert S. Kerr.
9:00 p.m.	Annual Dance. Featuring Frankie Lester and the Billy May Band, Persian Room, Skirvin *Tower* Hotel

The social highlight of the annual meeting will be the President's Inaugural Dinner-Dance, Monday evening. Bring your best gal to Oklahoma Medicine's top event of 1962.

Inaugural ceremonies will see Clinton Gallaher, M.D., Shawnee, turn over association leadership to J. Hoyle Carlock, M.D., Ardmore. In addition, the more than five hundred physicians and wives expected to attend will hear Senator Robert S. Kerr present an address on national legislative affairs. Kerr is co-author of the Kerr-Mills Act, American Medicine's choice of legislative solutions to the problem of providing health care for the indigent elderly. He is a foremost opponent of the socialistic King-Anderson Bill.

Enjoy the delightful dance music of the Billy May Band, which has been called "A Tidal-Wave of Fresh, Musical Expression!" Don't miss the inventive, danceable tunes of one of America's top bands.

TICKETS

Social hour, prime rib of beef dinner, inaugural ceremonies and program, plus the finest entertainment—all of this for only $7.50 per person! Attendance will be limited by the capacity of the Persian Room, so act now by sending your check to the Oklahoma State Medical Association, Box 9696, Oklahoma City. Tickets for the best evening of the year will be sent to you by return mail.

House Of Delegates Meeting

10:00 A.M., MAY 5th, PERSIAN ROOM, SKIRVIN TOWER

AGENDA *

OPENING SESSION

I Call to Order
II Invocation
III Report of Credentials Committee
IV Introduction of Guests
V Remarks of Speaker
VI Nomination of Officers
VII Board of Trustees Report
VIII Reports of Councils
IX Introduction of Resolutions, Amendments to Constitution and By-Laws
X Necrology Report

CLOSING SESSION

I Call to Order
II Reports of Reference Committees
III Election of Officers
IV Adjournment

*Condensed version, subject to modification

OFFICERS TO BE ELECTED

President-Elect
Vice-President
Secretary-Treasurer
Speaker of the House of Delegates
Vice-Speaker of the House of Delegates
Delegate to the American Medical Association
Alternate Delegate to the American Medical Association
Trustees from Districts 1, 4, 7, 10, and 13

Oklahoma State Medical Association
1962 DELEGATES AND ALTERNATES

SOCIETY	DELEGATE	ALTERNATE
ALFALFA	C. A. Traverse, M.D., Alva	John X. Blender, M.D., Cherokee
WOODS		
ATOKA	J. T. Colwick, M.D., Durant	Robert E. Engles, M.D., Durant
BRYAN		
COAL		
BECKHAM	James M. Bayless, M.D., Elk City	William M. Leebron, M.D., Elk City
BLAINE	Richard A. Conley, M.D., Watonga	Billy Dale Dotter, M.D., Okeene
CADDO	E. T. Cook, Jr., M.D., Anadarko	A. C. Roberson, M.D., Anadarko
CANADIAN	Alpha L. Johnson, M.D., El Reno	Jack P. Enos, M.D., Yukon
CARTER	Roger J. Reid, M.D., Ardmore	Tom C. Sparks, M.D., Ardmore
LOVE	Clifford L. Lorentzen, M.D., Ardmore	Ralph W. Murphy, M.D., Ardmore
MARSHALL		
COOKSON HILLS (Cherokee, Adair and Sequoyah)	Charles T. Morgan, M.D., Tahlequah	Bryce O. Bliss, M.D., Tahlequah
CHOCTAW	J. A. LaCroix, M.D., Hugo	Bill E. Woodruff, M.D., Hugo
PUSHMATAHA		
CLEVELAND	K. H. Bagwell, M.D., Norman	Iva S. Merritt, M.D., Norman
McCLAIN	C. A. Smith, M.D., Norman	D. L. Dycus, M.D., Norman
	W. C. McCurdy, M.D., Purcell	W. R. Patten, M.D., Norman
COMANCHE	W. A. Matthey, M.D., Lawton	Melton Meek, M.D., Lawton
COTTON	Leslie T. Hamm, M.D., Lawton	Royce B. Means, M.D., Lawton
CRAIG	W. G. Chestnut, M.D., Miami	David Carson, M.D., Fairland
OTTAWA	Donald H. Olson, M.D., Vinita	J. M. McMillan, M.D., Vinita
CREEK	Charles A. Carmack, M.D., Sapulpa	Charles T. Kent, M.D., Bristow
CUSTER	J. Harold Tisdal, M.D., Clinton	E. R. Flock, M.D., Weatherford
EAST CENTRAL	William N. Weaver, M.D., Muskogee	Marvin Elkins, M.D., Muskogee
(Muskogee,	Tom S. Gafford, Jr., M.D., Muskogee	Virgil Matthews, M.D., Muskogee
Wagoner and	William S. Dandridge, M.D., Muskogee	Robert A. Honea, M.D., Muskogee
McIntosh)		
GARFIELD	Mark D. Holcomb, M.D., Enid	Joseph W. Stafford, M.D., Enid
KINGFISHER	Paul H. Rempel, M.D., Enid	Hugh H. Matthews, M.D., Enid
	Lillian H. Robinson, M.D., Enid	C. J. Roberts, M.D., Enid
GARVIN	John M. Moore, M.D., Pauls Valley	John A. Graham, M.D., Pauls Valley
GRADY	B. C. Chatham, M.D., Chickasha	Rossler H. Henton, M.D., Rush Springs
GRANT	F. P. Robinson, M.D., Pond Creek	Robert W. Choice, M.D., Wakita
GREER	Dwight D. Pierson, M.D., Mangum	L. O. Short, M.D., Granite
HUGHES	H. V. Schaff, M.D., Holdenville	R. C. McDougal, M.D., Holdenville
SEMINOLE	Claude B. Knight, M.D., Wewoka	Julian Wood, M.D., Seminole
JACKSON	C. L. Tefertiller, M.D., Altus	Wayne A. Starkey, M.D., Altus
JEFFERSON	Harold H. Stout, M.D., Waurika	W. A. Heflin, M.D., Ryan
KAY	Robert F. Morgan, M.D., Blackwell	L. W. Ghormley, M.D., Blackwell
NOBLE	Harold Jones, M.D., Ponca City	P. A. MacKercher, M.D., Ponca City
	Charles E. Martin, M.D., Perry	A. M. Brown, Jr., M.D., Perry
KIOWA	Jack B. Tolbert, M.D., Mountain View	Ralph S. Phelan, M.D., Hobart
WASHITA	S. Tisdal Jones, M.D., Cordell	Gordon Livingston, M.D., Cordell
LeFLORE	C. S. Cunningham, M.D., Poteau	R. L. Winters, M.D., Poteau
HASKELL		
LINCOLN	Ned Burleson, M.D., Prague	Charles Robertson, M.D., Chandler
LOGAN	L. H. Ritzhaupt, M.D., Guthrie	J. S. Petty, M.D., Guthrie
McCURTAIN	Robert L. Loftin, M.D., Broken Bow	(Not Reported)
MURRAY	R. W. Morton, M.D., Sulphur	(Not Reported)
NORTHWESTERN (Beaver, Dewey, Ellis, Harper, Woodward)	R. G. Obermiller, M.D., Woodward	William F. Hudson, M.D., Buffalo

OKFUSKEE	Dayton M. Rose, M.D., Okemah	Charles A. Cashman, M.D., Okemah
OKLAHOMA	*H. T. Avey, M.D.	Robert M. Bird, M.D.
	Irwin H. Brown, M.D.	J. N. Lysaught, M.D.
	C. Alton Brown, M.D.	Charles M. Harvey, M.D.
	Jim M. Taylor, M.D.	John A. Cunningham, M.D.
	Ira O. Pollock, M.D.	J. M. White, Jr., M.D.
	Rex E. Kenyon, M.D.	Charles W. Cathey, M.D.
	Carl G. Coin, M.D.	M. T. Buxton, M.D.
	Earl Bricker, M.D.	C. R. Stansberry, M.D.
	F. H. McGregor, M.D.	H. C. Moody, M.D.
	Ralph Denny, M.D.	Charles N. Atkins, M.D.
	L. C. Taylor, M.D.	William R. Cleaver, M.D.
	Charles E. Delhotal, M.D.	George R. Randels, M.D., Midwest City
	Charles H. Wilson, M.D.	Jack G. Glasgow, M.D.
	Galen P. Robbins, M.D.	Leonard R. Diehl, M.D.
	James R. Riggall, M.D.	Jay T. Shurley, M.D.
	E. A. Walker, Jr., M.D.	Kenneth G. Ogg, M.D., Bethany
	R. Q. Goodwin, M.D.	Eugene F. Lester, M.D.
	Edward R. Munnell, M.D.	N. F. V. Barkett, M.D.
	Marvin B. Glismann, M.D.	John F. Montroy, M.D.
	J. R. Stacy, M.D.	William G. McCreight, M.D.
	J. Hartwell Dunn, M.D.	Martin H. Andrews, M.D.
	Robert J. Morgan, M.D.	Elwood Herndon, M.D.
	*All Oklahoma City	
OKMULGEE	Cleve Beller, M.D., Okmulgee	C. E. Smith, M.D., Henryetta
OSAGE	William A. Geiger, M.D., Fairfax	Vincent Mazarella, M.D., Hominy
PAYNE	Haskell Smith, M.D., Stillwater	O. M. Rippy, M.D., Stillwater
PAWNEE	E. M. Thorp, M.D., Cushing	G. R. Smith, M.D., Cushing
	M. L. Saddoris, M.D., Cleveland	R. D. Hargrove, M.D., Pawnee
PITTSBURG	F. T. Bartheld, M.D., McAlester	E. D. Greenberger, M.D., McAlester
	E. H. Shuller, M.D., McAlester	George M. Brown, Jr., M.D., McAlester
PONTOTOC	Ollie M. McBride, M.D., Ada	E. D. Padberg, M.D., Ada
	David C. Ramsay, M.D., Ada	C. P. Taylor, M.D., Ada
POTTAWATOMIE	Frances P. Newlin, M.D., Shawnee	Jerold D. Kethley, M.D., Shawnee
ROGER	W. A. Howard, M.D., Chelsea	Robert M. Stover, M.D., Claremore
MAYES	A. P. Compton, M.D., Pryor	Paul B. Cameron, M.D., Pryor
STEPHENS	Casper H. Smith, M.D., Duncan	Gerald L. Beasley, Jr., M.D., Duncan
TEXAS	E. L. Buford, M.D., Guymon	(Not Reported)
CIMARRON		
TILLMAN	R. G. Johnson, M.D., Frederick	Jack D. Honaker, M.D., Frederick
TULSA	*Harold J. Black, M.D.	Howard A. Bennett, M.D.
	James C. Peters, M.D.	H. F. Flanigin, Jr., M.D.
	Charles E. Wilbanks, M.D.	Joe L. Spann, M.D.
	Paul O. Shackelford, M.D.	William R. Turnbow, M.D.
	N. C. Gaddis, M.D.	James H. Neal, Jr., M.D.
	F. L. Flack, M.D.	Herbert S. Orr, M.D.
	Ben F. Gorrell, M.D.	Richard E. McDowell, M.D.
	Vincel Sundgren, M.D.	Jack L. Richardson, M.D.
	Rayburne W. Goen, M.D.	Paul T. Strong, M.D.
	Worth M. Gross, M.D.	James B. Thompson, M.D.
	Ceylon S. Lewis, Jr., M.D.	Fred E. Woodson, M.D.
	Harlan Thomas, M.D.	Hugh B. Nicholas, M.D.
	James W. Kelley, M.D.	Charles J. Lilly, M.D.
	L. A. Munding, M.D.	C. Thomas Thompson, M.D.
	Craig S. Jones, M.D.	Iron H. Nelson, M.D.
	*All Tulsa	
WASHINGTON	E. M. Amen, M.D., Bartlesville	J. E. Scott, M.D., Bartlesville
NOWATA	L. C. Barnes, M.D., Nowata	H. E. Denyer, M.D., Bartlesville
	Ira Clair Liebrand, M.D., Bartlesville	John R. Reid, Jr., M.D., Nowata

HOUSE OF DELEGATES: BUSINESS AFFAIRS

The following amendments and resolutions are brought to the attention of county medical societies. The items reported here represent those received in time for publication in advance of the meeting. Reports and proposals received subsequently will be reproduced and inserted in the portfolio now being prepared for each county society delegate.

Amendments to the Constitution and By-Laws

1. Amend the Constitution and By-Laws in all sections where the words "Council" and/or "Councilor(s)" appear by replacing such designations with the words "Board of Trustees" and "Trustee(s)", respectively.

2. Amend Chapter I, Section 3.01 of the By-Laws, by inserting the following words at the beginning of the third sentence, and making them a part of that sentence:

"An authenticated copy of . . . "

3. Amend Chapter III, Section 8.00 of the By-Laws, by creating a new paragraph 8.09 and by re-numbering succeeding paragraphs in consecutive order, to-wit:

"8.09 REPORTS OF THE COUNCILS."

4. Amend Chapter III, Section 9.00 of the By-Laws, by changing the order of paragraphs 9.01 through 9.05 as follows: 9.03, 9.04, 9.01, 9.02, and 9.05; and by renumbering the paragraphs in consecutive order.

5. Amend Chapter VI, Section 1.00 of the By-Laws, by inserting the words "Councils and" between the words "all" and "committees" in the second sentence of the paragraph.

6. Amend the By-Laws by inserting a new Chapter VIII and by redesignating all succeeding chapters of the By-Laws, as follows:

"Chapter VIII"
"Councils"

"Section 1.00 COUNCILS. The Councils of the Association shall be: Council on Public Policy, Council on Insurance, Council on Professional Education, Council on Socio-Economic Activities and Council on Public Health.

"1.01 PURPOSE. The Councils shall assist the President in planning, supervising and controlling appropriate aspects of the Association program. At the discretion of the President, Association committees will be grouped under the direction of appropriate Councils.

"1.02 APPOINTMENT. Each Council shall consist of at least six members of the Association, and the membership of each Council may include the chairmen of the committees under its direction. Physicians will be appointed to the Councils by the President, to serve concurrently with his term of office."

7. Amend Chapter IX, Section 1.00 of the By-Laws, by inserting the words "Medical School Liaison Committee" between the words "Grievance," and "Executive."

8. Amend Chapter IX, Section 8.00 of the By-Laws, by adding the following new paragraphs:

"8.01 DUTIES. The Executive Committee shall serve in an advisory capacity to the President.

"8.02 MEETINGS. The Executive Committee shall meet on call of the President."

9. Amend Chapter IX of the By-Laws by creating a new Section 9.00 and by redesignating the present Section 9.00 as Section 10.00, to-wit:

"Section 9.00 MEDICAL SCHOOL LIAISON COMMITTEE.

"9.01 DUTIES. The Medical School Liaison Committee shall establish necessary liaison with the University of Oklahoma School of Medicine and with the Board of Regents of the University of Oklahoma.

"9.012 The Medical School Liaison Committee shall develop and sustain a program designed to interest well-qualified and motivated students in medicine as a career."

10. Amend Chapter IV, Section 11.00 of the By-Laws, by replacing the word "annual" with the word "biennial."

11. Amend Chapter VII, Section 11.00 of the By-Laws, by replacing the word "annually" with the word "biennially" and by changing "April 1st" to "July 1st."

12. No official action shall be taken by the Oklahoma State Medical Association establishing any schedule of fees for the medical, surgical, and special services of its members. The Oklahoma State Medical Association shall not enter into a contract with any person, firm, or agency, with respect to the practice of medicine or fees for such practice.—Creek County Medical Society

Resolutions

Subject: Participation in Youth Fitness Program **Resolution 1**
Introduced by: Pottawatomie County Medical Society

WHEREAS, The health and physical fitness of the young people of our nation is now and will continue to be a problem of interest and concern to us both as physicians and parents, and

WHEREAS, Our County Medical Society recognizes the need for an adequate youth physical fitness program incorporated in our educational system, and

WHEREAS, The problems of formulating, instigating, and managing such a program, we feel should involve local decisions, to be adapted by parents and citizens directly concerned to suit our own local problems and facilities, rather than federal directives which not only cannot interpret our local problems or desires, but also extend in one more direction the control of the federal government over individual freedom and responsibility, be it therefore

RESOLVED, That the Pottawatomie County Medical Society pledges its full cooperation in establishing and maintaining a program of youth physical fitness, but emphasizes its opposition to federal intervention, control, or attempt at standardizing "norms," "requirements," or otherwise implementing the program.

Subject: Relative Value Schedules **Resolution 2**
Introduced by: Pottawatomie County Medical Society

WHEREAS, the development of a relative value scale of fee schedules has been urged upon us and our profession, primarily by "third parties," interested neither in our profession nor our privileged relationship with our patients, but instead to satisfy their own needs and in so doing undermine the right of each individual physician to deal directly with his patient for the service to be rendered and the fee to be charged, and

WHEREAS, the development of a relative value scale of fee schedules would allow persons outside our profession to use these schedules for the purposes of bargaining, fee setting, and "total coverage" programs, and would allow these persons to use this schedule to attempt to control and "hold down" medical charges, disregarding completely that many times no fees are charged for services rendered, and that in any instance in which suitable adjustments in such programs have been attempted, the physician and the medical profession are regarded as the sinner and "gouger," in spite of the known fact that physician's fees have not increased in proportion to the rising cost of living, and

WHEREAS, the development of such a program of relative value scale is one more attempt to enlist the physician in a program of compromise and surrender which, if al-

lowed to continue, can only lead to the ultimate adoption of government control of such a schedule, and along with it the entire medical profession, and

WHEREAS, the development of such a program is impossible, since it can not of necessity take into consideration the obvious non-standardization of the multiplicity of procedures in the practice of medicine, when performed by more than one physician, and cannot take into consideration that no two patients can be placed on a scale and standardized, and cannot stereotype any given medical case with regards to risk, pathology, care and time involved, training of the individual physician, and many other nebulous factors that are so inherent in the time-honored doctor-patient relationship.

THEREFORE, BE IT RESOLVED: That the Pottawatomie County Medical Society considers that the only proper and satisfactory fee arrangement in a free enterprise society is that reached by private contract between individual patient and physician, and that activities by "third parties" in the medical care field should be limited to developing contracts between themselves and potential patients, and

BE IT FURTHER RESOLVED: That we instruct our delegate to the House of Delegates of the Oklahoma State Medical Association of our feelings on these matters, and urge the adoption of similar resolutions by our State Medical Association through our delegate, indicating that such relative value scales are not in the best interests of the Society or its members, or of the public at large.

Subject: AMPAC and OMPAC **Resolution 3**
Introduced by: Tulsa County Delegation

WHEREAS, The objectives of the American Medical Political Action Committee are commendable by assisting physicians and others to organize for more effective political action and in carrying out civic responsibilities, by encouraging physicians to understand the true nature of their government as to important political issues and as to the records of office holders and candidates for elective office, and by stimulating doctors and others to take a more active and effective part in governmental affairs, including the election of desirable candidates to office, and

WHEREAS, The objectives of the Oklahoma Medical Political Action Committee are similarly commendable in their application at the local level,

NOW THEREFORE, BE IT RESOLVED: That the Oklahoma State Medical Association officially recognize and endorse the American Medical Political Action Committee and its component, the Oklahoma Medical Political Action Committee for their commendable programs of activities; and further, that the Oklahoma State Medical Association recommend to its members that they become active dues-paying members of AMPAC and OMPAC.

Subject: Free Choice of Physician **Resolution 4**
Introduced by: Tulsa County Delegation

WHEREAS, There continues to be an alarming trend toward restrictions on the fundamental right of the patient to freely select his own physicians, not only in private programs of health care, but in medical care benefits now available or proposed by the various agencies of government, and

WHEREAS, Such restrictions are not in the best interests of either patient or physician, contributing to the regimentation of medicine, the destroying of the vital doctor-patient relationship through third-party interference and direction, and constituting an encroachment upon the fundamental rights of the individual,

NOW THEREFORE, BE IT RESOLVED: That the Oklahoma State Medical Association affirm its support of the principle of free choice of physician by the patient, and

BE IT FURTHER RESOLVED: That the Oklahoma State Medical Association, through

an appropriate council or committee, and with the assistance of its officers and employees, embark upon a public education program to acquaint industry, government and the general public with the benefits provided by the effective application of the principle of free choice of physician.

Subject: Compulsory Retirement Age Resolution 5
Introduced by: Tulsa County Delegation

WHEREAS, It is the official position of the American Medical Association and the opinion of most individual members of the medical profession that the compulsory retirement of employees at an arbitrary age—usually 65—without consideration to physical and mental condition is medically unjustified and unfair to many individuals who are qualified to continue their employment, and

WHEREAS, The compulsory retirement deprives industry of the talents of experienced persons who are physically and mentally productive, contributes in some cases to management problems, constitutes a financial hardship on many individuals who have limited retirement benefits, and in some cases increases the burden of government to care for such persons,

NOW THEREFORE, BE IT RESOLVED: That the Oklahoma State Medical Association formally express to industry through an educational campaign administered by an appropriate committee its opposition to compulsory retirement of employees at an arbitrary age, urging the creation of a policy of considering retirement upon an individual basis with respect to the physical and mental condition of the employee and other factors.

Subject: Two-day Meeting of the OSMA House of Delegates Resolution 6
Introduced by: Tulsa County Delegation

WHEREAS, The volume of official business and other matters brought to the attention of the House of Delegates of the Oklahoma State Medical Association is continuing to grow year by year, and

WHEREAS, The custom of transacting all business in the course of a single day has the effect of limiting consideration of resolutions and reports, handicapping the activities of the Resolutions Committee through hasty examination, discouraging the presentation of special features which might be of interest to the House, and in some instances, depriving delegates of the privilege of attending portions of the scientific sessions concurrently in progress.

NOW THEREFORE, BE IT RESOLVED: That in the interests of providing adequate time for consideration, examination and discussion of all matters brought to its attention, the annual meeting of the House of Delegates of the Oklahoma State Medical Association be scheduled in separate sessions on two successive days of the Association's Annual Meeting, such schedule to be determined by the Speaker of the House of Delegates and announced in advance to all delegates, and

BE IT FURTHER RESOLVED: That the Speaker of the House of Delegates may at his discretion, and after examination of the apparent volume of work to be conducted, limit the session to a single day if so indicated.

Subject: OSMA Legislative Tour to Washington Resolution 7
Introduced by: Tulsa County Delegation

WHEREAS, Various state medical associations have reported the value and success of a scheduled visit of officers and influential physician members as a group to their Congressional delegations in Washington, D.C., said tours being for the value of discussing pertinent medical and other types of legislation of interest to the medical profession and to entertain senators and representatives as a measure of friendship and appreciation,

NOW THEREFORE, BE IT RESOLVED: That the OSMA Federal Legislation Committee be instructed to organize and develop a group tour of Oklahoma State Medical Association officers and influential members

to Washington, D.C., at an appropriate time for purposes of meeting with federal legislators for business and social reasons; each individual member attending shall defray the costs of his own transportation, hotel and other expenses not provided for in the official tour program, and

BE IT FURTHER RESOLVED: That each component county medical society of the Oklahoma State Medical Association be requested to arrange a similar meeting with its representatives and senators in the Oklahoma State Legislature for the purpose of discussing pertinent state legislation, said meeting to be held at least once each year at a suitable time and place.

Subject: Funds for Medical Examiner Law **Resolution 8**
Introduced by: Tulsa County Delegation

WHEREAS, The Oklahoma State Medical Association has for a number of years actively worked for a Medical Examiner System for the State of Oklahoma, and succeeded in having such a law enacted by the Oklahoma State Legislature in 1961, and

WHEREAS, This legislation failed to include an appropriation of funds to pay for operation of the program, and to make said program succeed funds are vital and necessary,

NOW THEREFORE, BE IT RESOLVED: That the Oklahoma State Medical Association formally endorse and approve the Medical Examiners law and direct that the State Legislative Committee cause to be introduced into the Oklahoma State Legislature a proposed law providing the necessary finances for implementation of the Medical Examiners law, and that every effort be made to secure passage and approval of such proposed appropriations.

Subject: Seat Belts-Auto Safety Campaign **Resolution 9**
Introduced by: Oklahoma County Medical Society

WHEREAS, injury and death from automobile accidents is one of the nation's most serious health problems; and

WHEREAS, the value of seat belts in protecting against injury from automobile accidents has been well established; and

WHEREAS, safety officials, public health agencies, the American Medical Association and many state and county medical societies have formally endorsed widespread use of such safety devices;

NOW, THEREFORE, BE IT RESOLVED: That the Oklahoma State Medical Association go on record as favoring universal use of automobile safety belts; and

BE IT FURTHER RESOLVED: That physicians encourage their patients to install and use seat belts.

Subject: Licensure Renewal Fee **Resolution 10**
Introduced by: Oklahoma County Medical Society

WHEREAS the Oklahoma State Board of Medical Examiners operates an office for the maintenance of records and other business pertaining to the licensing of doctors in the State of Oklahoma and is financed solely by fees authorized under the Medical Practice Act which are paid by the doctors, ten per cent of which must be by law paid into the State General Revenue Fund.

AND WHEREAS the State Board of Medical Examiners has performed a function of service to the doctors as well as the general public in that every reasonable service and courtesy and source of information which may properly be performed under the law has been foremost in the minds of those who attempt to serve this purpose.

AND WHEREAS the cost of maintaining an office, including postage, printing costs, rent and other expenses has increased over 26 per cent in the last ten years while the income has increased only about 20 per cent in the same period, making is impossible to operate under the present fees.

AND WHEREAS the expenditures have exceeded the income for the past six years.

AND WHEREAS the State Board of Med-

ical Examiners is being compelled to move to one of the new State Capitol Office Buildings at an increase of 25 per cent in rent cost,

BE IT RESOLVED: That the Oklahoma County Medical Society recommends to the Oklahoma State Medical Association that 59 O.S. 1961 § 495 be amended in the 1963 session of the Legislature as follows:

ANNUAL RENEWAL CERTIFICATE OF REGISTRATION: FEE

59 O.S. 1951, § 495-a—AMENDMENT

Each person holding a license or certificate issued by the Board of Medical Examiners of the State of Oklahoma authorizing him to practice medicine and surgery in Oklahoma, who desires to continue to so practice after the expiration of the fiscal year ending June 30, 1941, shall, on or before June 10, 1941, and annually on or before June 10 of each year thereafter, apply to the Secretary-Treasurer of said Board, on forms furnished thereby, for a Renewal Certificate of Registration entitling him to practice medicine and surgery in Oklahoma during the next ensuing fiscal year. *Each such application shall be accompanied by a renewal fee in an amount fixed by the State Board of Medical Examiners, provided said fee for an annual renewal shall not exceed Ten Dollars ($10.00) per year.* Upon receipt of such an application and fee it shall be the duty of the Secretary-Treasurer, on or before June 25 of the year the application and fee are so received, to issue to the applicant a Renewal Certificate of Registration for the next ensuing fiscal year, which certificate will entitle the person to whom it is issued to practice medicine and surgery in Oklahoma during said fiscal year. Provided, that no such Certificate of Registration shall be required of a person for the fiscal year in which he received, either on examination or by reciprocity, his original license or certificate to practice medicine and surgery in Oklahoma.

Subject: Permissive Legislation—Narcotics in Formation **Resolution 11**
Introduced by: Oklahoma County Medical Society

WHEREAS the Uniform Narcotic Drug Act specifies that a licensing board be notified only of a conviction of a violation,

AND WHEREAS the State Board of Medical Examiners has been able to secure reports of violations and has taken disciplinary action which in many instances has resulted in the rehabilitation of the doctor without undue publicity,

AND WHEREAS the Narcotic Enforcement Division of the Office of the Attorney General has cooperated with the State Board of Medical Examiners in preventing minor violations from becoming major problems,

BE IT RESOLVED: That the Oklahoma County Medical Society recommends to the Oklahoma State Medical Association that 63 O.S. 1961 § 415 be amended in the 1963 session of the Legislature as follows:

We do recommend the enactment of legislation authorizing the Narcotic Enforcement Division of the Attorney General's Office to furnish state licensing boards any information in its files concerning any person licensed under the laws of this state to practice any profession, to the Board which issues licenses for such profession.

Subject: Concerning Government Employment Services **Resolution 12**
(Oklahoma State and U. S. Employment Security Commission)
Introduced by: Oklahoma County Medical Society

WHEREAS, The original sole purpose and function of this governmental agency was to pay compensation for deserving unemployed persons who apply to them, and assist them in finding employment, thus giving welfare assistance in a time of need, and therefore keep to a minimum those persons requiring unemployment compensation.

WHEREAS, In the past several months in Oklahoma, these government services have hired sales people to call upon Medical Of-

fices to ask that both the physicians and their employees rely upon the Government Employment Services for all their employment needs.

WHEREAS, This same service has contracted with some, and attempted to do so with other professional medical associations in other States to handle placement of all personnel in the medical field.

WHEREAS, Public money has been used to buy advertising in newspapers over the state, searching for professional skilled medical personnel, asking them to come into their offices to obtain desired positions in the medical field. These advertisements are NOT searching for people on the unemployment rolls, but primarily for people holding jobs over the state who might be interested in changing position for salary increases only. These are people sorely needed in their present positions—nurses, laboratory technicians, medical secretaries, etc. who have no unemployment problem.

WHEREAS, These actions by the Government Employment Services in no way increase the number or availability of these professionally trained people, nor do they in any way reduce unemployment cost. They do however, give implication to persons professionally trained or otherwise, that employment in the medical field can and should come primarily through registration with these government offices. Such an approach can only lead to displacement of, and subsequent increase in the cost of paramedical personnel, and add unnecessary additional advertising costs to the already large budget of the said Government Employment Services.

WHEREAS, The Oklahoma County Medical Society believes that the functions which the said government agency is apparently trying to assume with regard to hospital and medical office personnel can best be handled by the professional associations themselves, and private enterprise currently established in this field, schooled and experienced in medical employment,

BE IT RESOLVED: That the Oklahoma County Medical Society go on record as opposing this action as one unnecessary, unjust and in direct competition with private enterprise which has been serving this function adequately at no expense to the taxpayer for decades. That this resolution be introduced, and adopted by the State Medical and Hospital Associations in order to alert all members of the Healing Arts to this encroachment by the Government Employment Services in Oklahoma, lest it destroy and usurp the fabric of Medical Services at all levels, by interfering with the established patterns of employment of personnel by practitioners and institutions. That this resolution be widely disseminated to all persons potentially effected by it, after due consideration by the assemblies, so that they can protect the interests of their loyal employees and resist the advances of government control into this field, by refusing to use this agency as a source of personnel. That the professions reinforce such agencies as the Registry for Nurses, Medical Assistant's Society, Registry of Laboratory and X-ray Technicians, etc. as are recognized by the society as being ethical, and that known reputable private employment agencies be commended for their services to our professions in this area.

Subject: Opposing Blue Cross-Blue Shield Service Plan for the Aged Resolution 13
Introduced by: Pottawatomie County

WHEREAS, A service plan insurance program has been proposed by the American Medical Association and American Hospital Association under the new National Blue Cross-Blue Shield Plan, and

WHEREAS, Service plan insurance by its nature, incorporates a third party for the purpose of limiting and regulating professional fees, and

WHEREAS, The physicians' fees and services remain the sacred responsibility of the doctor and his patient, therefore be it

RESOLVED: That the Pottawatomie

County Medical Society does not endorse the National Blue Cross-Blue Shield service plan policy, and recommends that its members not participate in the program, but instead urge that an indemnity type program be worked out.

Subject: Approval of OMPAC, AMPAC Resolution 14
Introduced by: Pottawatomie County

WHEREAS, The medical profession has been selected as a prime target for attempted socialization by the government and "third party" groups, and

WHEREAS, Physicians, by the nature of their profession, find themselves ill equipped to provide education and present their attitudes on a scale comparable to those organized against us, and

WHEREAS, The effective organization to represent our profession in a concerted effort toward public education and toward local, state, and federal political activities needs our support and strengthening, therefore be it

RESOLVED: That the Pottawatomie County Medical Society does hereby record its approval of Oklahoma Medical Political Action Committee and its purposes, and urges all County Society members to join and actively support, both financially and physically, its aims, and be it further

RESOLVED: That, in view of the national problems arising out of attempts to control and socialize the medical profession, involving effective political action and education on our part, the Pottawatomie County Medical Society does hereby also endorse and approve the American Medical Political Action Committee, and urges all its members to support and contribute to American Medical Political Action Committee and work for the achievement of its objectives; and be it further

RESOLVED: That the Pottawatomie County Medical Society urges Oklahoma Medical Political Action Committee and American Medical Political Action Committee to cooperate in obtaining for the doctors, medicine, and the general public that freedom in medicine which is essential to maintain the highest standards of medical care in the world.

Subject: AMPAC-OMPAC Resolution 15
Introduced by: Washington-Nowata County Medical Society

WHEREAS, American medicine is faced today with ever increasing political activity directed toward establishing some form of a federally controlled medical program; and

WHEREAS, Local and state groups of physicians banding together locally to resist that effort but acting through organizations separate from their respective medical associations find themselves woefully inadequate to enlist effectively activity by all physicians and woefully inadequate to present their attitudes on a level competitive with the opposition; and

WHEREAS, It is recognized that even though the American Medical Association and several State Medical Associations are conducting accelerated public education programs, the local instrumentation of political activity needs strengthening; therefore, be it

RESOLVED: That the Oklahoma State Medical Association does hereby endorse and approve the Oklahoma Medical Political Action Committee and its purposes, and urges all OSMA members and their families to join, support, contribute to, and work towards the success of OMPAC and its objectives; and be it further

RESOLVED: That in view of the national and federal aspects of many political issues, political education and effective political action, the Oklahoma State Medical Association does hereby endorse and approve the American Medical Political Action Committee and urges all OSMA members and their families to support, contribute to, and work

towards the success of the AMPAC and its objectives; and be it further

RESOLVED: That the Oklahoma State Medical Association does hereby urge the Oklahoma Medical Political Action Committee and the American Medical Political Action Committee to work together and to cooperate to the greatest extent possible so as to accomplish in the most effective manner, the political aims and objectives of the physicians of this state and of this country for the greater benefits of medicine, the public health and all our citizens.

Subject: Blue Cross-Blue Shield Indemnity Contract **Resolution 16**
Introduced by: Washington-Nowata County Medical Society

WHEREAS, The new National Blue Cross-Blue Shield Plan for the aged as proposed by the American Medical Association and the American Hospital Association is a service plan insurance program; and

WHEREAS, Service plan insurance injects a third party for the purpose of limiting, lowering, and stereotyping medical professional fees; and

WHEREAS, The doctor's fees are the economic responsibilities of the physician and his patient; therefore, be it

RESOLVED: That the Oklahoma State Medical Association does not approve the new National Blue Cross-Blue Shield Service Contract and encourages its members not to participate in the program.

We recommend instead, that an indemnity type contract be worked out.

Subject: The Bauer Statement **Resolution 17**
Introduced by: Washington-Nowata County Medical Society

WHEREAS, The House of Delegates of the American Medical Association in June 1961, enthusiastically endorsed the statement of principle introduced by Doctor Louis H. Bauer; the statement being as follows:

"The House of Delegates of the American Medical Association records its opposition to any legislation of the King-Anderson type. Its opposition is based on the facts that such legislation does not meet the needs of the situation; interferes with the doctor-patient relationship; interferes with the rights of doctors employed in hospitals; is inordinately expensive; leads inevitably to further encroachments by government into medical care; results eventually in a deterioration of the type of medical care rendered the public; and is therefore detrimental to the public interest.

"The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay; and it further believes that the profession will render that care according to the system it believes is in the public interest; and that it will not be a willing party to implementing any system which we believe to be detrimental to the public welfare."

WHEREAS, The Federal Administration continues to push for a type of medical care for the elderly regarded by most physicians as inimical to the best interests of both patient and physician; and

WHEREAS, The Administration has instituted traveling White House Conferences (at taxpayers expense) to try to sell this fallacious idea to the public; now therefore be it

RESOLVED: That the Oklahoma State Medical Association approves the Bauer statement and encourages its members in each county of the State of Oklahoma to help

formulate and effectuate definite plans to oppose all legislation of the King-Anderson type.

Subject: Relative Value Fee Schedules Resolution 18
Introduced by: Washington-Nowata County Medical Society

WHEREAS, The development and use of so-called Relative Value Fee Schedules for the medical profession have been requested and urged chiefly by "third parties" with vested interests in regulation of doctor-patient economics, ostensibly as a more satisfactory means of predicting and controlling premium rates; and

WHEREAS, Certain segments of the medical profession have yielded to such requests and have developed and adopted such Relative Value Fee Schedules for the general purpose of negotiating with "third parties" for the provision of medical services; and

WHEREAS, By developing Relative Value Fee Schedules the medical profession would assume the unwarranted and onerous responsibility of adopting schedules satisfactory to "third parties" as well as all others concerned; and

WHEREAS, It is clearly impossible to stereotype any given medical case with regards to risks, pathology, care involved, training of the individual physician and other imponderable factors; and

WHEREAS, Previous experience with fee schedules of all types, as used by "third parties," has shown that the adopted schedule becomes regarded as a ceiling for all fees—whether covered by the plan in question—from which attempts at reduction are frequently made, without regard for increases in overhead and cost-of-living met by physicians; and

WHEREAS, Past attempts to invoke individual consideration for cases, where such seemed warranted, have usually met with frustration and arbitrary pigeonholing; and

WHEREAS, Past attempts at suitable adjustments in Relative Value Schedules by groups of physicians have resulted in friction and reference to the medical profession and its members as "gougers," "thieves," and "sinners" and in more polite terms, as "engaging in inflationary practices"; and

WHEREAS, Efforts are now under way to develop a Relative Value Fee Schedule on a national basis, which will introduce unnatural conformity of all such proceedings, and have the ultimate predictable result of strict nationwide fee control by some central authority, probably the Federal Government; therefore, be it

RESOLVED: That the Oklahoma State Medical Association does hereby disapprove the development and use of said Relative Value Scale and does hereby encourage its members not to participate in development or use thereof.

Subject: Constitutional Amendent Resolution 19
Introduced by: Creek County Medical Society

WHEREAS, it becomes evident that each year some proposal is made to establish a fee schedule for the medical, surgical and special services of the members of the Oklahoma State Medical Association, and

WHEREAS, the CONSTITUTION AND BY-LAWS of the Oklahoma State Medical Association provides no provisions for the establishment of such a fee schedule for its members, therefore be it

RESOLVED: That no official action shall be taken by the Oklahoma State Medical Association establishing any schedule of fees for the medical, surgical and special services of its members and be it further

RESOLVED: That the Oklahoma State Medical Association shall not enter into a contract with any person, firm, or agency, with respect to the practice of medicine or fees for such practice and be it further

RESOLVED: That this resolution be written into the Constitution of the Oklahoma State Medical Association.

MRS. W. PAT FITE, Sr.
Muskogee
President
Woman's Auxiliary
Oklahoma State
Medical Association

MRS. MILTON L. BERG
Tulsa
President-Elect
Woman's Auxiliary
Oklahoma State
Medical Association

MRS. AARON MARGULIS
Santa Fe, N.M.
Director
Woman's Auxiliary
American Medical
Association

MRS. ELIAS MARGO
Oklahoma City
President-Elect
Woman's Auxiliary
Southern Medical
Association

MRS. PETER A. MacKERCHER
Ponca City
1st Vice-President
Woman's Auxiliary
Oklahoma State
Medical Association

MRS. TOM C. SPARKS
Ardmore
2nd Vice-President

MRS. J. HUTCHINGS WHITE
Muskogee
Secretary

MRS. LOUIS S. FRANK
Oklahoma City
Treasurer

MRS. C. F. FOSTER, Jr.
Oklahoma City
Treasurer-Elect

MRS. DELBERT G. SMITH
Oklahoma City
General Chairman

WOMAN'S AUXILIARY

to the

OKLAHOMA STATE MEDICAL ASSOCIATION

ANNUAL MEETING

May 4, 5, 6, 7, 1962

SKIRVIN HOTEL and

HUCKINS HOTEL, OKLAHOMA CITY, OKLAHOMA

MRS. DELBERT G. SMITH
Convention Chairman

MRS. STERLING T. CRAWFORD
Co-Chairman

REGISTRATION and INFORMATION
FRIDAY, MAY 4, 1962

Skirvin Hotel, Mezzanine Floor, Blue Room
1:00 p.m.-5:00 p.m.

Hospitality Room—Blue Room, Skirvin Hotel

The Hospitality Room will be open during registration hours, Friday through Sunday, for the convenience of members and guests.

OKLAHOMA DOCTORS' AND AUXILIARY MEMBERS' HOBBY SHOW

MRS. C. L. OGLESBEE
Chairman

MRS. D. NELLO BROWN
Co-Chairman

Hobbies of Oklahoma Physicians and Auxiliary members are presented in this interesting exhibit, and will be on display in the Continental Room of the Skirvin Hotel.

TICKETS

Tickets for the luncheons will be sold at the Registration desks.

WOMAN'S AUXILIARY

to the

OKLAHOMA STATE MEDICAL ASSOCIATION

Huckins Hotel and Skirvin Hotel — Oklahoma City, Oklahoma

ANNUAL MEETING
May 4, 5, 6, 7, 1962

MEDICAL ADVISORS
1961-1962

Virgil Ray Forester, M.D., Oklahoma City
John Powers Wolff, M.D., Oklahoma City
Walter E. Brown, M.D., Tulsa
James S. Petty, M.D., Guthrie

PROGRAM

FRIDAY, MAY 4, 1962

1:00-5:00 p.m.—Registration and Hospitality Room, Skirvin Hotel, Blue Room.

6:30 p.m.—Dinner and Board Meeting for members of the Executive Board of the Woman's Auxiliary to the Oklahoma State Medical Association.

SATURDAY, MAY 5, 1962

9:00 a.m.-5:00 p.m.—REGISTRATION AND INFORMATION, Skirvin Hotel Mezzanine, Blue Room.

8:30 a.m.—PAST PRESIDENTS' BREAKFAST, Huckins Hotel, Laurel Room.

10:00 a.m.—GENERAL SESSION, Victorian Room, Huckins Hotel, Mrs. Pat Fite, President, Woman's Auxiliary to the Oklahoma State Medical Association, presiding.

CALL TO ORDER: Mrs. Fite.

INVOCATION: Mrs. M. L. Henry, Past-President, Woman's Auxiliary to the Oklahoma State Medical Association.

PLEDGE OF LOYALTY: Mrs. Virgil Ray Forester, Past-President, Woman's Auxiliary to the Oklahoma State Medical Association.

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals."

WELCOME: Mrs. S. Fulton Tompkins, President, Oklahoma County Medical Auxiliary.

GREETINGS: J. Hoyle Carlock, Jr., M.D., President-Elect, Oklahoma State Medical Association.

INTRODUCTION OF SPECIAL GUESTS: Mrs. W. C. Bradford, first President of the Woman's Auxiliary to the Oklahoma State Medical Association. *Sponsor:* Mrs. Charles Smith.

Mrs. Neil Woodward, Civil Defense Chairman, Woman's Auxiliary to the American Medical Association, and member of the National Board of Civil Defense for the U.S. Government. *Sponsors:* Mrs. W. R. Cheatwood and Mrs. Iron Hawthorne Nelson.

Mrs. Elias Margo, President-Elect, Woman's Auxiliary to the Southern Medical Association. *Sponsors:* Mrs. F. H. McGregor and Mrs. Virgil Ray Forester.

Mrs. Aaron Margulis, Director, Board of the Woman's Auxiliary to the American Medical Association. *Sponsors:* Mrs. E. Clyde Mohler and Mrs. John Powers Wolff.

GUEST SPEAKER: Mrs. Aaron Margulis.

IN MEMORIUM: Mrs. Clifford M. Bassett, Past-President, Woman's Auxiliary to the Oklahoma State Medical Association.

ANNOUNCEMENTS BY GENERAL CHAIRMAN OF CONVENTION: Mrs. Delbert G. Smith.

ROLL CALL BY COUNTIES: Mrs. Louis S. Frank, Treasurer, Woman's Auxiliary to the Oklahoma State Medical Association.

TREASURER'S REPORT: Mrs. Louis S. Frank, Treasurer, and Mrs. C. F. Foster, Jr., Treasurer-Elect, Woman's Auxiliary to the Oklahoma State Medical Association.

READING AND ADOPTION OF THE MINUTES: Mrs. J. Hutchings White, Secretary, Woman's Auxiliary to the Oklahoma State Medical Association.

REPORT OF THE CREDENTIALS COMMITTEE: Mrs. Sanford Matthews, Chairman

REPORTS AND INTRODUCTION OF OFFICERS AND COMMITTEE CHAIRMEN:
First Vice-President, Mrs. Peter A. MacKercher
Second Vice-President, Mrs. Tom C. Sparks

Corresponding Secretary, Mrs. J. Hutchings White
Parliamentarian, Mrs. Virgil Ray Forester
Historian and Archivist: Mrs. E. E. Chambers
Editor: Mrs. Samuel T. Moore
Co-Editor: Mrs. John Powers Wolff
American Medical Education Foundation: Mrs. Richard E. Witt
Civil Defense: Mrs. David C. Ramsay
Community Service: Mrs. Joe M. Parker
Doctors' Day: Mrs. Floyd T. Bartheld
Doctors' Hobbies: Mrs. C. L. Oglesbee
Editor, Woman's Auxiliary Page in *The Journal*, Oklahoma State Medical Association: Mrs. J. J. Maril
Finance-Budget: Mrs. John W. Records
By-Laws and Revisions: Mrs. John Powers Wolff
Legislation: Mrs. Clinton Gallaher
Loan Fund: Mrs. E. Clyde Mohler
Mental Health: Mrs. Marion E. Sheets
National Bulletin: Mrs. William Kenneth Walker
Press and Publicity: Mrs. E. Cotter Murray
Program: Mrs. W. R. R. Loney
Recruitment (Health Careers): Mrs. Charles M. O'Leary
Rural Health: Mrs. Dayton M. Rose
Safety: Mrs. Merle D. Fox
Student American Medical Auxiliary: Mrs. Thomas L. Ozment
Hospitality: Mrs. Ancel Earp, Jr., Chairman, Mrs. Marvin K. Margo
Hand Book: Mrs. Shade D. Neely

REPORT OF THE NOMINATING COMMITTEE: Mrs. Milton L. Berg, President-Elect, Woman's Auxiliary to the Oklahoma State Medical Association.

ANNOUNCEMENTS: Mrs. Fite

RECESS

1:00 p.m.-2:30 p.m.—LUNCHEON (Informal) FOLLOWED BY BUSINESS MEETING, Crystal Room, Huckins Hotel.
Invocation: Mrs. Willis K. West.

2:30 p.m.—CALL TO ORDER: Mrs. Pat Fite, President,, Woman's Auxiliary to the Oklahoma State Medical Association.
Invocation: Mrs. Clinton Gallaher, Past-President, Woman's Auxiliary to the Oklahoma State Medical Association.

PLEDGE OF LOYALTY: Mrs. Richard E. Witt
WELCOME: Mrs. Richard A. Clay, President-Elect, Oklahoma County Medical Auxiliary.
GREETINGS: Clinton Gallaher, M.D., President, Oklahoma State Medical Association.

MESSAGE FROM SOUTHERN: Mrs. Elias Margo, President-Elect, Woman's Auxiliary to the Southern Medical Association.

ROLL CALL BY COUNTIES: Mrs. Louis S. Frank, Treasurer, Woman's Auxiliary to the Oklahoma State Medical Association.

REPORTS: COUNTY PRESIDENTS:

Atoka-Bryan-Coal ..... Mrs. Seals Whitely
Carter-Love-Marshall ..... Mrs. Joe Moxley
Cleveland-McClain ..... Mrs. Jim L. Haddock
Comanche-Cotton ..... Mrs. Douglas Wilson
Cookson Hills ..... Mrs. Tom Morgan
Custer ..... Mrs. Glenn P. Dewberry
East Central ..... Mrs. Benjamin Gaston
Garfield-Kingfisher ..... Mrs. Evan Chambers
Grady-Caddo ..... Mrs. Sam Davis
Kay-Noble ..... Mrs. Dewey L. Mathews
Kiowa-Washita ..... Mrs. Aubrey Stowers
Lincoln-Pottawatomie ..... Mrs. John W. Johnson
Oklahoma ..... Mrs. S. Fulton Tompkins
Okmulgee ..... Mrs. R. D. Miller
Ottawa-Craig ..... Mrs. David Carson
Payne-Pawnee ..... Mrs. R. D. Hargrove
Pittsburg ..... Mrs. C. E. Lively
Pontotoc ..... Mrs. Carl D. Osborn
Rogers-Mayes ..... Mrs. M. R. Jennings
Stephens ..... Mrs. E. B. Thomasson
Tulsa ..... Mrs. Leonard L. Kishner
Washington-Nowata ..... Mrs. E. M. Amen

REPORT OF CREDENTIALS COMMITTEE: Mrs. Sanford Mathews, Chairman.

OLD BUSINESS

NEW BUSINESS

ELECTION OF DELEGATES TO NATIONAL CONVENTION

ELECTION OF OFFICERS

INSTALLATION OF OFFICERS: Mrs. Aaron Margulis, Director, Board of the Woman's Auxiliary to the American Medical Association.

PRESENTATION OF PAST PRESIDENT'S EMBLEM: Mrs. Virgil Ray Forester.

PRESENTATION OF PRESIDENT'S PIN AND GAVEL: Mrs. Pat Fite.

ANNOUNCEMENTS BY CONVENTION CHAIRMAN: Mrs. Delbert G. Smith.

ADJOURNMENT

6:30 p.m.—Specialty Dinners—Doctors and Wives.

SUNDAY, MAY 6, 1962

9:00 a.m.-12:00 p.m.—REGISTRATION AND INFORMATION: Skirvin Hotel Mezzanine, Blue Room. MORNING LEFT OPEN FOR CHURCH-GOERS.

12:30 p.m.—LUNCHEON AND STYLE SHOW, "A Day in May," Skirvin Tower, Persian Room.

6:30 p.m.—MEDICAL RESEARCH DINNER, Faculty House.

6:30 p.m.—AMERICAN COLLEGE OF SURGEONS DINNER.

MONDAY, MAY 7, 1962

9:00 a.m.—BREAKFAST FOLLOWED BY POST-CONVENTION SCHOOL OF INSTRUCTION, Huckins Hotel, Victorian Room, Mrs. Milton L. Berg, President-Elect, Woman's Auxiliary to the Oklahoma State Medical Association, Presiding.

4:00 p.m.-5:00 p.m.—RECEPTION FOR BOARD MEMBERS AND THEIR HUSBANDS, HONORING MRS. AARON MARGULIS, Dr. and Mrs. Pat Fite, President's Suite, Huckins Hotel.

7:00 p.m.-1:00 a.m.—PRESIDENT'S INAUGURAL DINNER-DANCE, Skirvin Tower, Persian Room.

CONVENTION COMMITTEES

MRS. DELBERT G. SMITH, *Chairman*
MRS. STERLING T. CRAWFORD, *Co-Chairman*

Registration	Mrs. John M. Carey
Credentials	Mrs. Sanford Matthews
Hospitality Room	Mrs. Ancel Earp, Jr. Mr. Marvin K. Margo
Courtesy	Mrs. George S. Bozalis
Hobby Show	Mrs. C. L. Oglesbee
Tickets	Mrs. Joseph W. Funnell
Luncheon	Mrs. Sterling T. Crawford
Decorations	Mrs. John R. Danstrom
Past-Presidents' Breakfast	Mrs. Virgil Ray Forester
Publicity	Mrs. J. Samuel Binkley

And a HAPPY HOBBY TO YOU, too! This year the doctors have kindly invited their wives to bring along their hobbies to the Convention.

So, Doctor, please take this home to your wife and give her the responsibility for getting your display ready.

If your hobby is too big or if it is alive, how about some pictures of it?

DOCTOR'S HOBBY SHOW

OSMA Annual Meeting

Skirvin Hotel

Oklahoma City

May 5, 6, 7, 1962

Application for Hobby Show Space

56th ANNUAL MEETING

OKLAHOMA STATE MEDICAL ASSOCIATION

DESCRIBE EXHIBIT, including information as to size, shape and value (insurance is provided):

IMPORTANT: Deliver exhibit to Skirvin Hotel after noon, May 4. Your exhibit will be personally attended and insured at all times. It must be picked up by noon May 8th—NO LATER!

AUXILIARY MEMBERS — report to your local Hobby Chairman what you will exhibit. Recognition will be given to counties, and to members at large. Mail this form today! Applications close April 25th.

MAIL TO:

Mrs. C. L. Oglesbee
Chairman
2601 West Broadway
Muskogee, Oklahoma

Mrs. D. Nello Brown
Co-Chairman
500 N.W. 41st
Oklahoma City, Oklahoma

The Role . . .

(Continued from Page 110)

cost of their care to make it possible to render care to those of little or no income. Hospitals, in addition, have long sought payment from government sources in behalf of indigent patients who were the recipients of public assistance. Physicians have varied their charges according to ability to pay and have thus eased the economic burden for the indigent or medically indigent patients. Local governmental institutions for both long and short term care have been built for the treatment of patients unable to finance their care.

During the depression years of the Thirties, when a large segment of the population needed assistance in paying for health care, hospitals stimulated the spread and development of the Blue Cross movement. Reflecting this beginning, Blue Cross Plans have shared with hospitals a community orientation and a concern which has extended to all members of the community. The community orientation of Blue Cross can be seen in the liberal service benefits provided, in a minimum of underwriting restrictions, in service contracts with community hospitals and in broad representation of local interest on Plan Governing Boards of Trustees.

Soon after Blue Cross became established, physicians encouraged the organization of Blue Shield Plans to help people meet the cost of surgical-medical services through prepayment.

During the 1940's and 1950's, Blue Cross and Blue Shield experienced an explosive growth. Their success developed public interest in prepayment concepts and mechanisms and encouraged imitators. Most Plans made provision for enrollment of the aged and all Plans continued coverage upon retirement even though it was recognized that the high utilization of hospital services by the aged increased the costs of benefits for all covered persons. The objective was to cover all segments of the community—not just the low-risk groups—and, in effect, to give substance to the goals inherent in non-profit operation and the status accorded the Plans by enabling legislation. Unfortunately, many other types of underwriting agencies had less concern about the aged and other high-risk groups. As a result it is increasingly difficult for Blue Cross Plans to shoulder their current responsibilities, to maintain their competitive position, and to make significant progress in covering the still uncovered aged persons.

Both Blue Cross Plans and hospitals clearly recognized the problem of financing care for the retired aged as it began to emerge as a major public issue in the middle of the last decade. The Commission of Financing Hospital Care, sponsored by the American Hospital Association, in 1953 and 1954 cited the financing of health care needs of the aged as a major problem. In 1954 the American Hospital Association officially gave recognition to the financing of health care for the aged as a prime concern of hospitals and the Association.

Between 1954 and 1961 Blue Cross and hospitals have studied the problem of financing care for older persons and have made their policy recommendations public. Blue Cross for a long time stood virtually alone in giving assurances that membership would not be cancelled because of age. All Plans permit persons leaving group coverages, for whatever reason, to maintain their protection on an individual or conversion basis. A decade ago, Blue Cross began urging employers and unions to keep retirees in active employee groups at the same benefits and rates.

Widely Held Convictions of Administrators of Blue Cross Plans and Hospitals

Given the complexity of the problem of financing health care of the aged and the lack of agreement upon the extent of their unmet health needs, as well as the variations in local experience, it is to be expected that there is not complete consensus within government or voluntary agency circles on how best to formulate an effective program for improved financing of care for the retired aged. The divergent points of view of various interest groups add to the difficulty in reaching accord on the policy questions. Among Blue Cross people and hospital administrators, however, certain convictions are widely held. These are based on long experience in provision and financing of care for aged persons, which might be stated as follows:

1. The aged have unique problems in financing health care. A disproportionate number have low incomes and high medical expenses. When they as individuals purchase health benefits, their protection often tends to be of poor quality at a high cost. On the whole, their incomes are relatively fixed and not protected against inflation. The aged are more subject to long-term illnesses requiring intensive and expensive care. Because of the changing character of the urban family, the aged are being helped less and less by family members. Advances in medical science, and their attendant costs, will have a growing impact upon the aged in future years. Shifting economic and social events are placing the aged in an increasingly disadvantaged position.

2. As is true for other age groups, medical expenses for the aged individual are largely unpredictable. Such expenses fall unevenly among the aged population, causing a few to experience, in a given time period, very high expenses and others, lesser amounts or none.

3. Taken together, these first two points indicate the need for some method to enable the aged to share their risks of illness and for some method which will bring prepaid protection within their financial reach.

4. Because of the competitive circumstances under which health benefits are purchased, the voluntary non-profit agencies acting alone, even with their close working relations with hospitals and their practices of "community rating" and "surcharging" experience-rated ac-

counts, cannot keep the price of protection within the limited purchasing power of many aged persons. Additional help is needed and Government is the logical source for this help.

5. Legislation for assisting the aged in the financing of their hospital care should embody the following principles:

a. It should strengthen rather than weaken the voluntary system's ability to serve the aged and the total community. It should assure that government help will supplement and strengthen present voluntary mechanisms for financing rather than duplicate them.

b. The amount of money needed over-all is enormous. Both private and government sources will be required to produce the necessary funds.

c. The administrative and technical skills required to operate the prepayment machinery are in short supply. There are compelling reasons to employ the available skilled personnel now on the staffs of the voluntary institutions rather than to aggravate the shortage by creating new government agencies which would be in active competition for these scarce skills.

d. The availability of health services, and facilities, as well as manpower, must be considered. The fact that there are existing shortages in key services, such as post-acute facilities, and in key skills such as physical medicine, which are especially needed by the aged must be given special consideration in financing health care for the aged. To provide benefits without a sensitive appreciation of their impact on quality and the continued and orderly development of needed services and resources would promote second-rate care.

e. It should take into account the needs of all aged on a nationwide basis—not just those in a given geographical area, category or classification. The medical and financial needs of the aged are in a continuum. A program to meet these needs should be based on a common set of principles applicable to all aged throughout the country.

f. It should not segment the aged from other members of the community. There is merit in financing the health care of the aged through the same common mechanisms used by other age groups. With respect to health care the aged should not be categorized as a segregated community "problem." They should be given the same status and identification as are all age groups and be the beneficiaries along with everyone else of medical progress.

g. It should recognize that economic fortune, like illness, falls unevenly upon the population, including the aged. Not all of the aged need financial assistance. Given limited private and governmental resources, it is more productive to focus on those persons with insufficient purchasing power. The determination of need for supplementation should be as simple as possible and not degrading or embarrassing in character.

h. It should be expected that government support will involve government standards for the administration of benefits for cost controls, and quality of benefits and services. Government has an obligation to the public to assure that expenditures are prudent and in the public interest. The standards should encourage improved performance in all aspects of the program. They should not be manipulative of patients or patient care, nor manipullative of providers of services and voluntary institutions.

i. It should encourage local participation in operation to reflect local differences above the established equalized threshold of protection, to keep administrative decisions close to the people served, to the institutions providing services, and to avoid stereotype performance. Health care arrangements and scope of services, as well as provisions for financing, vary considerably by sections of the country and even by States, and areas within States. Equalization of benefits is desirable and necessary, but the local community, if it desires to do so, should be free to offer additional or supplementary benefits.

6. Benefits provided should be determined in accordance with the following standards:

a. They should include the services of hospitals and allied institutions and physicians services. Not only hospital care, but all elements of the medical care dollar are affected by unpredictability as to time, extent and cost of care.

b. The benefits provided should, to the extent possible, be on a service basis—i.e., the providers of service accept equitable reimbursement formulas and fees allowed as full payment for services provided without further charge to the patient. Economic barriers which tend to limit or postpone needed care such as restrictive deductibles, coinsurance, and indemnity devices should be avoided as peculiarly inappropriate to the financing of care for aged persons.

c. The benefits should be tailored to the particular needs of the aged and should be sufficiently comprehensive to assure coverage of essential services. Provisions for coverage of post-acute care and rehabilitation services, for example, are necessary and should be within the scope of benefits available.

d. The basic program assisted by government should be uniform throughout the country. However, provision should be made for building upon the nationwide minimum floor of protection through local supplementation.

e. The benefits should be simply stated and easy to understand and interpret.

7. The program's eligibility requirements should be liberal. All people over 65 should be eligible for coverage, without restrictions as to pre-existing conditions and without appreciable waiting periods.

8. Hospitals should be paid the full cost of care rendered on the basis of an approved reimbursement formula. The fiscal relationships be-

tween prepayment agencies and hospitals should be governed by the "Principles of Payment for Hospital Care" of the American Hospital Association. The financing of post-acute services should parallel the above principles as closely as possible. Other types of services should be reimbursed in accordance with the basic principle of payment on an inclusive cost-related basis.

The Blue Cross Role

There is a consensus among Blue Cross Plan directors and hospital administrators that with governmental financial assistance to the aged Blue Cross can meet the health care financing problems of the aged with respect to care rendered at hospitals and by allied institutions. This feeling is based on the following facts:

1. Blue Cross, through its nationwide network of Blue Cross Plans and its national organization, the Blue Cross Association, has now enrolled 57 million persons on either a local or national contract basis. Among those persons covered are some five million aged. Historically, Blue Cross Plans have provided more liberal benefits to aged persons, with fewer underwriting restrictions, than any other carrier in the United States.

Aged persons are enrolled by Blue Cross Plans as members of active employee groups with regular group benefits at group rates; as retirees with regular group benefits and rates as a part of established pension programs; as direct-pay subscribers who converted from group status upon retirement; as direct-pay non-group subscribers initially enrolled on this basis either before or after retirement; and as subscribers to special senior certificate programs established on a community-wide basis. Here is an established administrative organization operating locally and nationally with extensive experience covering all age groups, including the aged.

2. It is traditional for the government in the United States to purchase services from private institutions where such services are available on an administratively sound and economical basis.

Such arrangements strengthen voluntary institutions and make optimum use of the skills which are in short supply.

All Federal and State programs currently being discussed require the precise administrative organization, procedures, and relations with the providers of care now operative through Blue Cross. Involved are centralized, nationwide direction and coordination, and decentralized operation.

The volume of administrative procedures in present Blue Cross operations is approximately five to six times that required to administer a hospital and related benefit program for all aged. As a matter of public policy, it would be unwise for the Federal or State government to duplicate the administrative procedures and skills developed by Blue Cross for over a quarter of a century. It makes no sense to set up a duplicating government mechanism for administration of health benefits, when a well established and efficient mechanism is already available.

3. Payments of hospital and related benefits under the proposed government programs require agreements with the providers of service and continuous administration and maintenance of these agreements. This is a more complex administrative operation than making monthly social insurance money payments directly to individuals. Blue Cross has established effective record-keeping, reimbursement, audit, control, and other administrative relations with hospitals which are sensitively related to the problem of providing a high quality of patient care and which give an overt assurance to the public that its money is being properly and well spent. The economy and effectiveness of this operation cannot be overestimated nor should its importance to quality of care be overlooked.

4. Blue Cross Plans were established and given non-profit status under special enabling State legislation. The peculiar role of Blue Cross in meeting community needs was the justification for this unique treatment by State legislatures. Blue Cross Plans have accordingly made concerted efforts to enroll all segments of the community, the high-risk groups and the low-risk groups. Given appropriate support, Blue Cross Plans are able to meet the hospital and related benefit needs of all aged and at the same time integrate the aged into a total community prepayment health care benefit program.

5. Blue Cross has established effective working relations with government on a contractual basis at Federal, State, and local levels. The Civil Service Commission of the Federal Government has worked closely with Blue Cross in the enrollment of more than one million Federal employees, both active and retired—the largest single group covered for health benefits by any underwriter. The Armed Forces work closely with Blue Cross in the Medicare hospital benefit program for dependents of service personnel as its only contractor in 33 States and in Puerto Rico and Washington, D.C. In Texas, the State Welfare Department has selected Blue Cross as the underwriting agency for approximately 220,000 persons receiving old-age assistance. A program involving comprehensive Blue Cross-Blue Shield benefits has been in effect in Colorado for several years. Many State and local government employees groups have long been enrolled in Blue Cross.

6. In discussions of the various proposals for improved methods of financing health care for the aged, there is general concern that there be a maximum of local administration in which appropriate community groups participate. Blue Cross is local as well as national in its orientation and its operations. Use of Blue Cross will assure sensitivity to State and local problems and at the same time provide the national mechanism for uniformity in administration and application of necessary standards.

8. Blue Cross benefits provide a level of protection geared to the individual's requirements.

9. Eligibility provisions established by Blue Cross Plans reflect the spirit of their charters. Blue Cross Plans do not deny coverage to groups because of risk factors. They permit subscribers to continue coverage after leaving their place of employment whether the reason be age or disability.

10. Blue Cross operating costs are well below those that prevail for other underwriters for both group and non-group types of coverage.

Health Services and Manpower

As already indicated any program for financing health care of the aged should take into account available skills and services and the impact of newly available benefits on the development of new skills and services as well as the expansion of existing services and facilities. Currently, there is a shortage of many of the health care skills and facilities needed by the aged. The number of well equipped chronic hospitals and rehabilitation centers is minimal. Skilled nursing home beds with active medical supervision and safe surroundings are few indeed.

A program which suddenly creates new purchasing power where scarce resources exist will stimulate growth of new facilities. Without professional controls it will also stimulate expansion of substandard services and inflate costs. It would be a serious mistake to include in a new program all institutions now operating under the title of "nursing home," many of which do not even provide adequate nursing care, or medical services, and rehabilitation programs are conspicuous by their absence.

New benefits must be accompanied by standards and controls established and administered by persons and agencies familiar with the health needs of the aged and the relation of these needs to those of other age groups.

In his concluding remarks, McNerney has this to say:

Regarding government assistance to the aged, Blue Cross Plans and hospitals feel that three points are of major importance. First, present government programs such as Kerr-Mills must be strengthened and probably supplemented if the aged are to be adequately assisted. Second, the assistance should be given in such a way that it strengthens the voluntary system, and employs its resources, rather than involve the development of parallel administrative machinery. Third, the individual aged person should receive governmental financial assistance on a scale related to income. The determination of the amount of assistance given should be made before the fact of illness and might be in accordance with income as reported for Federal income tax purposes, or, if this is not feasible, some equally acceptable declaration of income might be used. The determinations for government-provided assistance should not be made in accordance with the detailed "means test" procedures applicable under public welfare programs. □

There follows the second annual report of the Blue Shield Study Commission. This commission is composed of six physicians and four members who represent the Blue Shield Plans. The physician members are: Henry Blake, M.D., Kansas; Carl R. Ackerman, M.D., New York; A. A. Morrison, M.D., California; David Allman, M.D., New Jersey; Dwight H. Murray, M.D., California; and George M. Fister, M.D., Utah.

SECOND ANNUAL REPORT OF THE BLUE SHIELD STUDY COMMISSION

Introductory

The Blue Shield Study Commission was established under the terms of a resolution adopted by the Conference of Plans in April 1960. The Commission was directed to study the variations and differences of concept and coverage among the Blue Shield Plans which have "placed barriers in the path of continued extension of Blue Shield coverage," and to "work toward solutions to resolve the difficulties involved."

In its first "Interim Report" to the Conference of Plans in 1961, the Commission analyzed the problem of national accounts and identified the "unwillingness of a minority of the Plans to participate in interplan and national contract offerings" as one of the major "barriers in the path of continued extension of Blue Shield coverage." The Commission also found that "the most frequent major obstacle to enrollment of national accounts is the inability of indemnity Plans to write these accounts on a service basis." Other "important obstacles" cited were the "multiplicity of minor variations among the Plans . . . , inadequate payment schedules and unrealistic service benefit income levels." The Commission also set forth certain guidelines for the development of national contracts.

Our 1961 Interim Report contained a specific definition of the "Blue Shield Concept"—a first step in setting up specific criteria as to what constitutes a good Blue Shield Plan. In this present report, we shall carry this idea a step forward, proposing the creation of a mechanism for evaluating and for promoting higher standards of Plan performance.

The Commission's first Interim Report also emphasized the desirability of increasing the representation of the public interest on the governing boards of Blue Shield Plans, while retaining a majority control by physicians, except where otherwise determined by law or by the sponsoring medical societies.

Finally, in our first Interim Report, the Commission emphasized the vital importance of Blue Shield maintaining the closest possible liaison with physicians and the medical societies at every level.

During the past year, the Commission has held four meetings. Our studies have been concentrated in six major areas:

1) The need to unify and coordinate all Blue Shield Plans in implementing a national Blue Shield pol-

icy and program in respect to national accounts.

2) The need to define acceptable criteria and to establish measurable standards of Plan performance which may ultimately be incorporated in the Membership Standards of the National Association of Blue Shield Plans.

3) The need to extend the concept of "full coverage" on a realistic basis, so that all Blue Shield Plans may be able to offer a substantial majority of their subscribers predictable coverage and an assurance that their contracts will actually provide full payment for the services they purport to "cover."

4) The need to develop a new, medically oriented national Blue Shield extended benefits or "major medical" program, integrating such extended benefits with the basic Blue Shield program.

5) The need for an explicit and positive recognition on the part of all physicians, Blue Shield leaders and leaders of organized medicine at every level—of the identity of Blue Shield as the prepayment agency of the medical profession, dedicated to maintaining our free system of medical practice.

6) The need for structuring the National Association of Blue Shield Plans in such a way that, as an organization, it can more effectively carry out the functions referred to in the previous items, such as:

a. Providing for an expanding program of research and development for Blue Shield;
b. Facilitating communications among the Plans and serving as an information center for Blue Shield;
c. Assisting and counseling Blue Shield Plans in solving local problems;
d. Aiding all Plans in interplan enrollment programs;
e. Establishing standards of Plan performance and helping all Plans to meet such standards.

We herewith submit the following report and recommendations, comprising the Second Annual Report of the Blue Shield Study Commission:

1) **A National Blue Shield Policy and Program for National Accounts**

If Blue Shield is to survive as a major factor in the voluntary health prepayment movement, it must meet the challenge of the national market. And, if the medical profession is to continue to be the master in its own house, it must do so through the mechanism of a strong Blue Shield.

The gauntlet has been thrown down, the challenge is before us now—today—and our response cannot be put over to another day.

Blue Shield must not only continue to serve a myriad of local purchasing units, but it must be able to meet the requirements of large national buyers. The predominant voices in both management and labor are asking for uniform **nationwide** patterns of benefits and uniform nationwide predictability of coverage through service benefits.

What has Blue Shield got to offer? Where precisely do we stand with respect to this challenge?

For more than five years, leaders of the National Association of Blue Shield Plans have tried to bring about a voluntary agreement among member Plans on a united approach to the national market. The best brains and ablest talents in our movement have been working to develop a program sufficiently uniform among the Plans, yet sufficiently flexible in alternative benefit patterns to meet the demands of national accounts.

A succession of efforts to develop national contract agreements culminated in the 1961 National Account Contract and Professional Services Index. Each of these contract agreements has set forth the scope of benefits that is universally recognized as comprising a good basic Blue Shield program. Through the Professional Services Index, the Association has developed a useful tool to provide the mechanism for establishing uniform relativity of payment schedules and to facilitate the approach to uniform predictability of coverage.

Twelve months ago, the Conference of Plans strongly approved these programs, and declared that " . . . our Blue Shield program faces sterner tests for survival today than ever before in our history. The hour of decision has struck and we must prepare ourselves without delay to meet the challenge of our times in the nations market place. . . . Let us get about the business of putting the program . . . to work" . . .

Nevertheless, the efforts of our National Association to bring about any practical conformity with recommended national enrollment patterns up to this time have not produced sufficient results.

We realize that some Plans face technical, legal, or medical relations problems which impede or delay them in adopting new contracts. We acknowledge and compliment many of the Plans on their prompt and effective action in conforming to national patterns, particularly in the motors and Federal Civil Service Employees programs.

Our experience with the Federal Employee Program demonstrated three points:

It proved first, that Blue Cross and Blue Shield can organize a nationwide program when they have to.

Second, our experience indicated that many Plans will take the necessary steps to accommodate themselves to a national program only when they are confronted with a specific demand from a particular account.

Third, this experience revealed the impossibility of competing for national accounts when or if we have to spend up to six months persuading the Plans to agree to the specific package desired by a particular account.

The Study Commission is convinced, beyond question, that if Blue Shield is to survive in the national market, this Association, as the instrument of organized medicine, in carrying out the will of the majority of its members, **must** have the power to require adherence of **all** member Plans in approved national enrollment programs.

Blue Shield today is not progress-

ing as it should in the national market. In our 1961 report to the Conference of Plans, this Commission called attention to the fact that a number of "blue chip" national organizations have taken their business away from Blue Shield. We also cited a few of the very large number of national accounts which Blue Shield might have enrolled and did not—in all instances primarily because of our inability to meet the requirements of national purchasers. Furthermore, Blue Shield has not been adequately prepared to retain some of the national accounts that were already enrolled.

The source of this failure is not to be found in any lack of agreement on the proposition that these problems must be solved, nor in any lack of effort on the part of your National Association to meet the challenge. The source of our failure lies in the present structure and powers of the National Association of Blue Shield Plans.

When most Blue Shield Plans were founded, twenty years ago, there was little or no national approach to medical prepayment. On the other hand, there was every reason to stress the principle of local autonomy in shaping these Plans, in order to foster the participation of local physicians in their guidance and operation. But times have changed. The principle of local autonomy is as valid as it ever was—for local problems. What is needed today is a new principle of cooperation for interplan and national accounts.

A new principle of national cooperation must be written into the By-Laws and Membership Standards of our National Association, applicable to those operations in which all Plans must act together if they are to act effectively.

If Blue Shield fails to serve the growing national market, it will fail in its fundamental purpose of preserving the **autonomy of the physician** to serve his patient in a free and independent system of medical practice. In view of these observations, the Commission offers the following recommendations:

Recommendations

1) The Commission recommends that the second sentence of the second paragraph of Chapter II of the By-Laws of the National Association of Blue Shield Plans, now reading as follows:

"Inherent in this purpose is a recognition that state and local Plans are and should be autonomous in their control and operation, in order that the needs, facilities and practices of their respective areas can be given due consideration."

be amended to read as follows:

"To meet the needs of their respective areas, member Plans are and should be autonomous in their control and operation. However, Blue Shield must serve the needs of all member Plans. The Corporation exists to serve such common needs, and it shall be supported in every lawful effort, regularly approved or enacted by the Members of the Corporation, to protect and promote the common purposes of Blue Shield subscribers, Member Plans and the medical profession."

This general principle, if so stated in the By-Laws defining the purposes of the National Association of Blue Shield Plans, should then be implemented in the "Membership Standards" by which all members are bound.

2) Therefore, it is further **recommended** that a new Section, to be designated "Section 11 — Interplan Obligations of Members," be inserted into the Membership Standards, **to read as follows:**

"Section 11. **Interplan Obligations of Members.** Active membership in the Corporation involves the following obligations, in addition to those set forth elsewhere in the By-Laws and Membership Standards:

Each active Member shall participate in the following programs as presently operated or as may be duly changed by action of the Corporation:

(1) The Interplan Pooling Agreement on Name and Symbol.
(2) The Interplan Transfer Agreement.
(3) Interplan National Account Agreements."

For the present, it is proposed to require participation in three national Blue Shield programs under this Membership Standard: 1) the Interplan Pooling Agreement on the Name and Symbol of Blue Shield; 2) the Interplan Transfer Agreement; and 3) the Interplan National Account Agreements. Additional national programs may be added to the list of required participating programs when and if the Conference of Plans decides to add such programs in the future.

2) **Standards of Plan Performance**

Just as it is imperative for Blue Shield Plans to be able to act together with respect to the national market, so it is no less necessary for all Blue Shield Plans to meet such basic standards of performance as will do credit to the medical profession and as will promote public acceptance of Blue Shield.

Our many Plans and our National Association have expended considerable time and effort to build a favorable and knowledgeable popular image of Blue Shield as the national, non-profit, community-oriented medical care prepayment program endorsed and sponsored by the medical profession. But every Blue Shield subscriber judges Blue Shield by the performance of his local Plan. Hence, the performance of each Plan is of crucial concern to every other Plan.

Our National Blue Shield Association has attained a maturity that enables it to examine and appraise the performance of its individual Plans, and this maturity challenges it to do so. The Study Commission has recognized the need to evaluate the effectiveness of each Plan, to review its achievements, and, where necessary, to offer advice and assistance in improving local Plan performance, both quantitatively and qualitatively. Our National Association should be assigned this responsibility.

Our presently established Membership Standards relate mainly to the financial operations of member Plans. This Study Commission has identified a number of additional areas of Blue Shield Plan operation and performance in which we believe it is possible to develop measurements or criteria of performance, and, eventually to establish acceptable standards. Given these standards, new provisions would ultimately be formulated to be incorporated in the "Membership Standards" of the Association. Through appropriate permanent committee mechanisms these standards would be applied and administered as part of the annual approval procedure for renewal of each Plan's membership in the National Association of Blue Shield Plans.

The following are some of the criteria by which Plan performance may be measured:

1) Adequacy of Payment of Medical Costs (claims payments in relation to reported charges)
2) Adequacy of Scope of Covered Services (extent to which all basic services are eligible for coverage)
   (availability of supplemental or extended benefits)
3) Extent of Predictability of Coverage (proportion of population eligible for service benefits)
   (proportion of physicians participating in service programs)
4) Extent of Public Acceptance
   (per cent of community population enrolled)
   (Blue Shield enrollment in relation to enrollment in other prepayment plans)
   (adequacy of non-group enrollment and coverage of special groups, i.e., aged, rural groups, low income families, etc.)
5) Public and Professional Relations
   (public participation on Blue Shield governing board)
   (effectiveness of utilization control programs)
   (participation of physicians and sponsoring medical societies in guiding and supporting medical policies)
   (effectiveness of communications with the public and the profession)
6) Cooperation in National Blue Shield Endeavors
7) Efficiency of Plan Operations

Our purposes in establishing a mechanism for evaluation of Plan performance are first, to establish a practical profile of an effective Blue Shield Plan; second, to enable each Plan and the National Association to measure the performance of that Plan in relation to this norm; and third, to help all Plans attain such a level of excellence in their performance that they will reflect credit upon themselves, every other Blue Shield Plan, and the medical profession.

Recommendation

We **recommend** that in the coming year, specific proposals be developed for measurement of acceptable Plan performance, for incorporation in the Membership Standards; and that recommendations be presented as to the procedure and agencies to be utilized in implementing this program.

3) **The Concept of "Full Coverage"**

In its 1961 Interim Report, the Commission declared that "service benefits are the hallmark of good Blue Shield and are vital to the future of independent private medical service in the United States."

The principle of predictable coverage, the assurance of full payment of covered services—by whatever name that principle may be called—is the medical profession's unique and vital contribution to our medical prepayment system.

The absence of a service benefit commitment in some very important areas of the nation has always been a serious obstacle to national enrollment.

Within the past year, the failure of a few important Plans to accept this commitment has resulted in the loss of one of Blue Shield's most important groups of industrial workers in those areas. Even more serious is the fact that Blue Shield in other Plan areas is seriously jeopardized by the inability of this industry to obtain any type of assured coverage from those few non-service Plans.

The question that should concern us—the crucial issue for the national leadership of medicine, as well as for Blue Shield—is not whether Blue Shield may fail. The real question is whether the medical profession, at this critical point in time, will support the principle of "paid-in-full" coverage in the only medically-guided and community-oriented prepayment program which can stem the drive toward a government-directed health insurance plan. It is an issue of fighting for the survival of private practice in the United States.

For Blue Shield to be the mechanism for survival, we must strengthen it. We must face the fact that the failure of any part of the profession to understand the need for a service commitment in their area is now a threat to the future of medicine's voluntary prepayment program in every part of the United States.

We must also face the fact that the failure of the profession in many inadequate service benefit areas to initiate and present a **realistic** service program worthy of the good name of the profession and of Blue Shield, likewise, jeopardizes the life of our entire program.

For it is not enough to have token service; we must have **realistic service**—throughout the length and breadth of our nation.

Our experience of the past few years points to the fact that time has run out for the indemnity principle. Nor can we realistically hope to compromise the issue and dilute the principle of service benefits by resorting to the device of paying "reasonable and customary" fees on a service basis, without a published schedule. To do so would invite first, the Plan administrators, second, the courts, and ultimately, the public authorities—state or federal—to establish the fees to be paid for the physicians' services.

Medicine's right to establish and maintain an equitable and appropriate fee level under a voluntary prepayment plan will be preserved only so long as the profession will main-

tain its own self-imposed discipline, through a realistic service benefit program. The price of freedom and self-determination is the acceptance of a reasonable self-discipline.

Recommendations

Five years ago, the Conference of Plans adopted the report of a special task force appointed to define an adequate service benefit program. This action is embodied in the present Section 6 of the Membership Standards which provides in part:

"A service benefit Plan shall attempt to provide a maximum family income limit high enough to include, potentially, a substantial majority—75 per cent or more—of the population in its area of operation. Such income limits shall be related to a schedule of maximum payments for eligible services that is based upon the normal average medical charges for such professional services rendered in the area for persons within the income levels specified for service benefits."

The Commission **recommends** that the words "attempt to" be deleted in the above quoted provision in the Membership Standards relating to **service** Plans.

The effect of this amendment would be henceforth to require each service Plan to **offer** a contract with an income level high enough to embrace potentially at least 75 per cent of the population.

The Commission also **recommends** that where a service Plan offers more than one level of income ceilings, payment schedules and subscription rates, the Plan should take every reasonable step to bring about the enrollment of all subscribers in the appropriate income level contracts. The Commission urges all Plans to utilize all available income distribution data in adjusting their income levels to the current income distribution in their areas of operation.

The Commission further urges that every service Plan should take all reasonable and practical steps to assure that all its subscribers who are entitled to service benefits will be treated on that basis.

The Commission has considered the question of whether the National Association of Blue Shield Plans should require that every Plan bearing the name and symbol of Blue Shield offer a realistic service program—at least for national accounts.

This question has been before us for many years, but never before has it been so urgently necessary as it is now for Blue Shield to be able to offer the assurance of fully paid predictable benefits on a nationwide basis. It is very encouraging to us that the medical profession and the Plans in many indemnity areas are reconsidering their attitude toward the service princple. It is most encouraging, too, in supporting our new Blue Shield program for the aged, that the American Medical Association has specifically endorsed the principle of service coverage for the over-65 population.

Time, circumstances, the inexorable demands of the market—and the very existence of Blue Shield—all are pressing for the solution of this problem. We cannot wait much longer for the necessary evolution of all Blue Shield Plans to a realistic service program.

After a full and fair study of this problem, the Study Commission herewith **recommends** that the Board of Directors of NABSP be directed to take extraordinary steps to bring to the attention of the medical profession and member Plans in every nonservice area the urgent necessity of their undertaking a commitment to the principle of fully paid, predictable benefits to the extent now to be required of all service benefit Plans.

4) **A Blue Shield Plan for Extended Benefits**

There is an imperative need for Blue Shield to do a more effective and satisfactory job in providing extended benefit coverage. Such coverage has not been adequately supplied or offered by Blue Shield, and consequently we have largely defaulted this field to the commercial insurance carriers.

In many instances, the insurance companies have persuaded industries which already had Blue Shield basic coverage to superimpose a commercial "major medical" program. This, of course, gives the commercial carrier a foot in the door.

The common pattern of superimposing commercial major medical on basic Blue Shield has other disadvantages to the medical profession, the patient and Blue Shield:

1) It splits medical care coverage between competing carriers which have conflicting and inconsistent philosophies and benefit patterns.
2) It is administratively inefficient, since in many cases medical reports and claim data must be submitted to two carriers in a single case; their respective liabilities have to be negotiated; and the entire claims procedure has to be duplicated.
3) It permits the insurance companies to take advantage of the commitment that participating physicians have made to their Blue Shield Plans to accept stated fees from Blue Shield for basic services. Service benefits have been made available to the public by voluntary action of the profession, through Blue Shield. They were intended both to meet the needs of the patient and to enable the profession to guide and direct the economics of medical care. By permitting commercial carriers to superimpose supplementary benefits on the Blue Shield service program, we enable them to utilize service benefits to support their own program, in supplying supplementary benefits over which the profession has no control.
4) A serious consequence of superimposing commercial major medical on basic Blue Shield coverage is the practice of some commercial carriers to make additional payments to non-participating physicians, under the major medical policy, for professional services that are covered in full by

the basic policy. Obviously this practice means that the major medical policy is being used not to provide additional services to the patient, but to give additional payments to some non-participating physicians. This perverts the principal purpose of a major medical program, to extend the **scope** of services available to the patient. In providing payments to the non-participating physician, many participating physicians consider that this practice works an inequity upon them. Thus it threatens the continued voluntary cooperation of the participating physicians in the Blue Shield service program. In the public interest, it should be pointed out that these additional payments tend to inflate the costs of medical care and the total costs of prepayment coverage for the subscribers.

Recommendations

The Study Commission **recommends** that the National Association of Blue Shield Plans immediately establish a Task Force on Supplementary Benefits, to comprise a representative group of physicians, public representatives and Plan administrators, with such technical advisors as may be required; and that this Task Force undertake a new study of the concept, purposes, desired ranges and patterns of major medical supplemental and extended benefits that should be medically oriented to patient needs by Blue Shield, reinforcing Blue Shield principles and practices; and that this study include the actual medical needs and the potential market for an integrated Blue Shield program, representing a new approach to the problem of "major medical" or extended benefits.

5) **Blue Shield and the Medical Profession**

The heart and substance of Blue Shield is its special relationship with the medical profession. Blue Shield was created by physicians to meet a need which no other agency was able or willing to meet. Blue Shield's unique contribution to the patient of lower and moderate income status—the assurance of fully paid service, of predictable and dependable benefit—rests upon the voluntary commitment of many thousands of physicians who have found that Blue Shield helps their patients pay for their services and helps to safeguard the private practice of medicine.

Thousands of these physicians have contributed their time and effort as trustees, directors or committee members, in guiding the medical policies of their local Plans.

Most Blue Shield Plans enjoy the active support of their local sponsoring medical societies, although there are some local areas where the relations between medical society and Plan need to be strengthened.

It is at the national level, however, in the relations between the American Medical Association and the National Association of Blue Shield Plans, that the greatest opportunity for more effective liaison is to be found.

The Study Commission has examined the past and present relations between AMA and NABSP. We note that the Board of Trustees of AMA designates official representatives to serve on the directorate of NABSP, and this liaison is to be augmented by the addition of representatives of the Council on Medical Services to the Board of NABSP.

The House of Delegates has recognized Blue Shield as "a proper economic arm of the medical profession." And, most recently, the Board of Trustes of AMA has entered into a new cooperative relationship with NABSP in promoting the development and acceptance of a jointly sponsored program for the aged.

The medical profession has an inescapable responsibility to present the people a mechanism for financing medical care under our voluntary system. Blue Shield is the best instrument available to fulfill this purpose. The basic purposes, the present needs and the future destiny of the medical profession in the United States are identified with and to a very considerable degree, dependent upon Blue Shield. It is encouraging to find everywhere a growing recognition of this principle.

The problems confronting the medical profession in the economic area are problems in which Blue Shield can be of help to the profession. And, by the same token, the problems that face Blue Shield as a national entity are problems of inescapable concern to the medical profession as a national entity. The medical profession, represented by the American Medical Association, has a vital interest in helping Blue Shield to meet the need to provide a national Blue Shield program that is sufficiently uniform and flexible to compete successfully in the national market with other national offerings which are not responsive to medical guidance or control.

So too, the medical profession is vitally concerned with Blue Shield's urgent challenge to offer at least a minimum standard of reasonable predictability of coverage to Blue Shield patients in every Plan area; and to lift the performance of every Blue Shield Plan up to that of the best of them.

Again, the necessity of bringing all physicians into a closer partnership with their local Plans may be greatly facilitated if the leadership of American medicine would lend its aid and support to our efforts in this direction.

Similarly, the AMA might be of significant assistance in working with Blue Shield where problems of medical practice involving Blue Shield have arisen.

The American Medical Association should be commended for the recognition of our mutual interests evidenced by the action of the House of Delegates in creating the Joint Commission of AMA, NABSP, AHA and BCA; and for the initiative already taken by the AMA Board of Directors in implementing a number of specific suggestions that were made by our Association to the AMA, through this Commission, for improving the relationships between AMA and Blue Shield.

editorial

The Study Commission warmly applauds these evidences of a growing recognition of the potential services of Blue Shield to both the public and the medical profession. We feel that the benefits of an ever more intimate and cooperative relationship between the AMA and Blue Shield are so great that every possible step should be taken to further this relationship.

Recommendations

The Study Commission **recommends** that the National Association of Blue Shield Plans and the American Medical Association act jointly through the appropriate committees of the Joint Commission on the Promotion of Voluntary Non-Profit Prepayment Health Plans to accomplish the following objectives:

1) To coordinate the efforts of the American Medical Association and Blue Shield in meeting the needs of the national groups and of such special segments as the old age group, low income groups, the farm population, etc.
2) To study and offer its good uses in resolving local problems involving the relations of local physicians with their local Blue Shield Plans.
3) To promote better understanding among both physicians and the public throughout the U.S. of the issues involved in providing better medical care through prepayment for all segments of the American people.

6) **Research and Development**

Another area in which Blue Shield activity at the national level can and should be greatly strengthened, is in research and development.

Such a program would accumulate and disseminate valuable information to the Plans and would provide the factual basis for the development of new benefit patterns, particularly for segments of the population now inadequately enrolled or inadequately covered by existing benefit patterns (i.e., the aged, chronically ill, very low income groups, rural populations, etc.).

A sound and progressive program of research and development would anticipate new and future public needs for prepaid medical care; it would develop programs for such contingencies as mass unemployment or inflation; it would assist Plans in scientific rate-making, in use of electronic equipment, in market research, in utilization controls, etc.

Recommendation

The Study Commission **recommends** that the Board of Directors of the National Association of Blue Shield Plans seek to determine the specific areas of needed and profitable research in which the Association could improve its service to Plans and to Blue Shield as a national entity; and, having identified these areas, that this Association develop a sound and progressive program of research and development.

Summary

In this report, the Blue Shield Study Commission has proposed changes in the organic structure of the Association designed to strengthen its effectiveness as Blue Shield's instrument in national affairs. The Commission has plotted a course of action whereby we may raise the standards of performance of every Blue Shield Plan up to the level of the best Plans. It has plotted a course toward the objective of enlisting the full participation of all Plans in a program to provide dependable assurances of predictable coverage for all Blue Shield patients in the moderate and lower income groups. It has proposed a new approach to an integrated Blue Shield major medical program. It has sought to emphasize the absolute necessity for the identification of the medical profession as the responsible principle, and of Blue Shield as the responsive mechanism, if medicine is to meet its full responsibility to the American people.

Our studies have revealed the need for a continuing study, for a greatly expanded program of research and development, and for the permanent establishment of a policy and planning agency, by whatever name it be called. Such a planning body may and should have access to all the administrative and technical agencies of NABSP, to which it may frequently assign tasks or apply for advice or assistance in specific areas of its study.

But the need for the permanent establishment of a policy and planning board should receive immediate and definitive consideration.

Conclusion

Blue Shield is by far the largest socio-economic enterprise ever created and sponsored by the medical profession in this or any other nation. The hope of preserving an atmosphere of freedom for the future evolution of the science and art of medicine rides upon the shoulders of Blue Shield, for it is the only nation-wide medical prepayment program which is both medically directed and community oriented.

Blue Shield is today both a major factor in our existing voluntary health insurance program and a crucial bulwark in preserving our free society. The American people have as vital a stake as the medical profession has in the security and destiny of Blue Shield.

The time has long since passed when we could afford to think about Blue Shield in small or self-centered parochial terms. We cannot afford to be thwarted or balked by the veto of an inefficient or recalcitrant member Plan. Nor can we afford to sacrifice the ultimate best interests of either the public or the profession to the importunities of special interest groups either among those who provide medical service or among those who receive it.

Blue Shield has come of age. It must play the role of an adult and responsible factor in our society. If Blue Shield is to survive this decade, it must watch the ever-accelerating pace of time in which we live. It must adapt its own evolution to the social, scientific and industrial revolution of which Blue Shield is itself a component part. □

Miscellaneous Advertisements

DENTAL OFFICE SPACE FOR RENT: Five rooms, central heating and air conditioning. Share waiting room, x-ray dark room, and bathroom with dentist in adjacent quarters. Ground floor, modest rent, heart of medical-dental area. Parking for patients. Contact W. T. McCollum, 437 NW 12th, Oklahoma City, by letter.

FOR SALE: In Norman, office equipment and medical library of late W. T. Mayfield, M.D. Also retirement home in Boston Mountains, south of Fayetteville, Arkansas. Contact Jack Luttrell, First National Building, Norman, Oklahoma.

OKLAHOMA HOSPITAL / CLINIC FOR SALE (20 bed, 1800 square feet clinic), fully equipped; established 23 years; 1961 gross $100,000 without major surgery; present owner desires to limit practice to dermatology and associate is leaving state; unopposed general practice opportunity; excellent farming community; completely air-conditioned brick; liberal terms available. Write Key A, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

WANTED EXPERIENCED G.P. to take over well established practice and well equipped offices in surburban Oklahoma City. Write Key D, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

ASSOCIATES WANTED—One for Internal Medicine and an Obstetrician to "take over" active growing practice. No financial investment. Colorado location. Write Key C, Oklahoma State Medical Association, P. O. Box 9696, Oklahoma City, Oklahoma.

FIRST YEAR RESIDENT in Internal Medicine desires two weeks' locum tenens in June or July. Don Karns, M.D., c/o St. John's Hospital, 21st and Utica, Tulsa, Oklahoma.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four - physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

GP PARTNER WANTED: Suburban Oklahoma City in GP clinic. Financial arrangements completely open first year, partnership to follow. Please give experience, training, religion, family, first letter. Desire American born veteran. Contact Key B, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

PHYSICIAN EXPERIENCED IN general practice, insurance and industrial work wishes opening in solo or group practice, school, industrial, institutional or government work. Contact Key F., The Journal of the Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: 100 x 100 Keleket X-Ray. Complete with two tubes, tilt table, and all kinds of accessories. Phil White, M.D., VI 3-4701.

Oklahoma State Health Department is now operating the OKLAHOMA POISON INFORMATION CENTER (night calls are being taken by St. Anthony Hospital.)
GArfield 7-6232 (day or night)

Put your low-back patient back on the payroll

Soma relieves stiffness —stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A.M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. **USUAL DOSAGE: 1 TABLET Q.I.D.**

The muscle relaxant with an independent pain-relieving action

SOMA®

(carisoprodol, Wallace)

Wallace Laboratories, Cranbury, New Jersey

Last month we presented the basic aims of Medical Auxiliary, especially to acquaint our newest members with our important objectives. It is also beneficial for many of us, as older members, to review our aims often.

We are divided into 52 "state" auxiliaries, including Washington, D. C., and Puerto Rico, all functioning under the leadership of our National Auxiliary, with headquarters in Chicago. As of June, 1961, we had a membership total of 81,780, with an Oklahoma membership of 1,282. In the future when some one refers to our Auxiliary "potential," there can be complete understanding.

Presidents-elect and Program Chairmen for the coming year will be delighted with the March issue of the *Bulletin* of the Woman's Auxiliary to the AMA. (Note: Subscription to the *Bulletin* is $1.00 annually, published quarterly.) In addition to reading the report from our own State President, Mrs. Pat Fite, Sr., (Maurine), you will want to read reports from each state. "Speaking Our Beliefs in Deeds" has been the motivation for numerous programs and ingenious plans. In most states emphasis seems to be on Legislation and AMEF, with Health, Safety, and Civil Defense placing collective third places. It should be quickly noted, however, that every worthwhile project, every constructive plan, carries with it invaluable community service.

In this vein, our State Community Service Chairman, Mrs. Joe M. Parker (Martha), feels strongly that there is gold in those community service hills. She sends this message, prior to State Convention:

"It takes a willing mind and body to be involved as a Community Service worker in the program of the Medical Auxiliary. And after we have been involved, we are very egotistical about the number of hours, *Props*, given, not alone from the personal satisfaction of this venture, but from the pleasant contact within our community and the resulting good public relations. The Medical profession recognizes the ramifications of this type of contact. In an address, Doctor Larson compared our Community Service hours (surveyed two years ago) of 3,108,314 hours of volunteer and philanthropic service to an understandable equivalent: If Miss Margaret Wolve, our National Executive Secretary, worked 12 hours a day for 354 years, our hours would be equated.

"Now, we want you to *Prospect* among your own membership; each member should give her County President the *Props*, or hours; in turn, she will forward the total hours to me, the State Chairman—and on to National. Find the Gold—be a little Community Service digger!"

Briefs: 1) Effective January 1, 1961, the American Medical Foundation was consolidated with the American Medical Research Foundation. For the remainder of this Auxiliary year, we will still make our contributions to AMEF—and remember our goal is $5.00 for each Auxiliary member. In the future, if you receive literature on AMA-ERF, do not be confused. The letters stand for the American Medical Association Education and Research Foundation. (Many auxiliaries are taking advantage of the playing cards offered by AMEF for their fund-raising project. Cards cost $1.10; re-sale can be either $2.00 or $2.50.)

2) The excellent procedure outline written by Mrs. Mackersie several years ago for the Auxiliary (and borrowed by dozens of our friends from other organizations) has an excellent follow-up in the *Bulletin*. The article deals with how to serve on a nominating committee, "The Future Is in Your Hands," and is written by Mrs. Paul Craig, a former National Past President, as is Mrs. Mackersie. Copies of this article should be given to every chairman of a nominating committee and to her committee members each year.

State Convention is May 4-7, 1962, in Okla. City. Success depends upon us—our attendance, our reports, and our interest.

OSMA JOURNAL / *the last word*

Attend Your 1962 Annual Meeting. It's worthy of your support . . . a necessary and valuable activity of Oklahoma's entire medical fraternity. It's going to be an especially fine meeting this year for many reasons. There's something for everyone, regardless of your type of practice, and it's scheduled for a weekend to minimize interference with your office hours. Don't miss this once-a-year opportunity for up-to-the-minute postgraduate education . . . for relaxation and entertainment . . . for visiting with friends and colleagues! See you in Oklahoma City on May 5th, 6th, and 7th.

The American Medical Association Education and Research Foundation has issued a $9,849.29 grant to the University of Oklahoma School of Medicine, representing Oklahoma's share of physicians' voluntary contributions to medical education. The check will be presented to Dean Everett at the House of Delegates meeting on May 5th.

Labor's Champion Lobbyists. The next time someone criticizes the AMA as the "biggest lobby in Washington," confront him with these facts from the AMA's Legislative Department . . . In 1961, labor unions spent $1,024,049.38 for lobby expenses, while the AMA spent only $163,404.61. AFL-CIO unions alone spent $706,961.79.

President Kennedy will take part in a giant political rally scheduled for Madison Square Garden on May 20th. Purpose: To organize the nation's aged population into a pressure group behind H.R. 4222, the King-Anderson Bill. The nationwide television promotion is sponsored by the National Council of Senior Citizens for Health Care through Social Security, an organization lead by former Representative Aime J. Forand, author of H.R. 4222's predecessor, the "Forand Bill." Forand has often described his bill as a "foot in the door" for complete socialized medicine. Church listening parties across the nation are reportedly being organized for the May 20th event.

Roger Fleming, secretary-treasurer of the American Farm Bureau, will speak on "Political Freedom" at an open meeting Friday, April 27th, 7:30 p.m., in the Coliseum dining room, El Reno. All state physicians and wives are invited to attend.

Doctor John R. Seale, British physician now on a speaking tour in the U.S., reports that 600 physicians are leaving England annually . . . equivalent to one-third of the annual supply of new medics.

Congratulations to Saturday Evening Post. Robert E. Fuoss, *Post* editor since January 1st has been asked to resign. As reported in the March issue of the *OSMA Journal,* Mr. Fuoss' editorial of February 4th was a vicious, unwarranted and inaccurate attack on the American Medical Association.

Joe C. Scott, President of Bankers Service Life Insurance Company, Oklahoma City, made news recently (reported in March *OSMA Journal*) when he wrote his policy holders and accused physicians and hospitals of fraudulently adding unwarranted charges to insurance claim forms. He's making news again . . . this time, a 35-year-old woman has accused him of beating her and has filed a $150,000 damage suit against him.

Tom S. Gafford, M.D., Muskogee Pathologist, has been named district director of the South Central Association Blood Banks.

MEETINGS

April 27	"Political Freedom" — Roger Fleming, 7:30 p.m., Coliseum, El Reno
May 1	OSMA Postgraduate Course ("The Lung") Miami, Oklahoma
May 5-7	Annual Meeting, OSMA, Skirvin Hotel, Oklahoma City
June 24-28	Annual Meeting, AMA, Chicago

..... a memo from and

published by Oklahoma Blue Cross and Blue Shield, Inc.

APRIL 1962

A REPORT TO THE PROFESSION

Blue Cross has a 22 year financial history in Oklahoma. Blue Shield has paid physicians for 17 years. The minutes and financial records of both corporations are a matter of public record and are on file in the State Insurance Commissioner's offices. An Annual Report of great detail is forwarded each year to the President of O.S.M.A. and the Executive Office.

The following is a summary of the major phases of the stewardship of over 160 million dollars of Oklahomans' dues:

Blue Cross
(1940 - 1961)

Income:	$109,862,607.
Utilization:	99,511,106.
Utilization Percentage	90.6%
Operational Percentage	7.6%
Operational Reserve	1.8%

Blue Shield
(1945 - 1961)

Income:	$51,135,050.
Utilization:	41,844,541.
Utilization Percentage	81.8%
Operational Percentage	12.3%
Operational Reserve	5.9%

Some significant facts from the 1961 Annual Report:

Currently, Blue Shield is paying Oklahoma physicians more than $6 million per year. This is an increase of over 100% in the last six years. During that same time, total membership has increased by only 30%. Operating expenses are at a new low of 11.6% of income.

What are the most frequent procedures? What percentage of physicians' charges in a given county does Blue Shield pay? What age group uses the most care? These questions and many others are answered in our Annual Report. The answers are surprising but important. Some educators, clinic managers and hospital trustees use them to good advantage. You are respectfully invited to peruse our statistics and financial report on file at the above-mentioned places.

(a supplement to the Journal of the Oklahoma State Medical Association)

The JOURNAL of the Oklahoma State Medical Association

MAY
1962
Vol. 55/No. 5

EDITORIAL BOARD

BEN H. NICHOLSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

C. B. DAWSON, M.D.
Editor

ROY O. KELLY, Jr., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D.
(Heart Page)
MRS. JOSEPH J. MARIL
(Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCIS P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

Is Papillary Andenocarcinoma of the Thyroid Really a Cancer? 185
President's Page 187

scientific

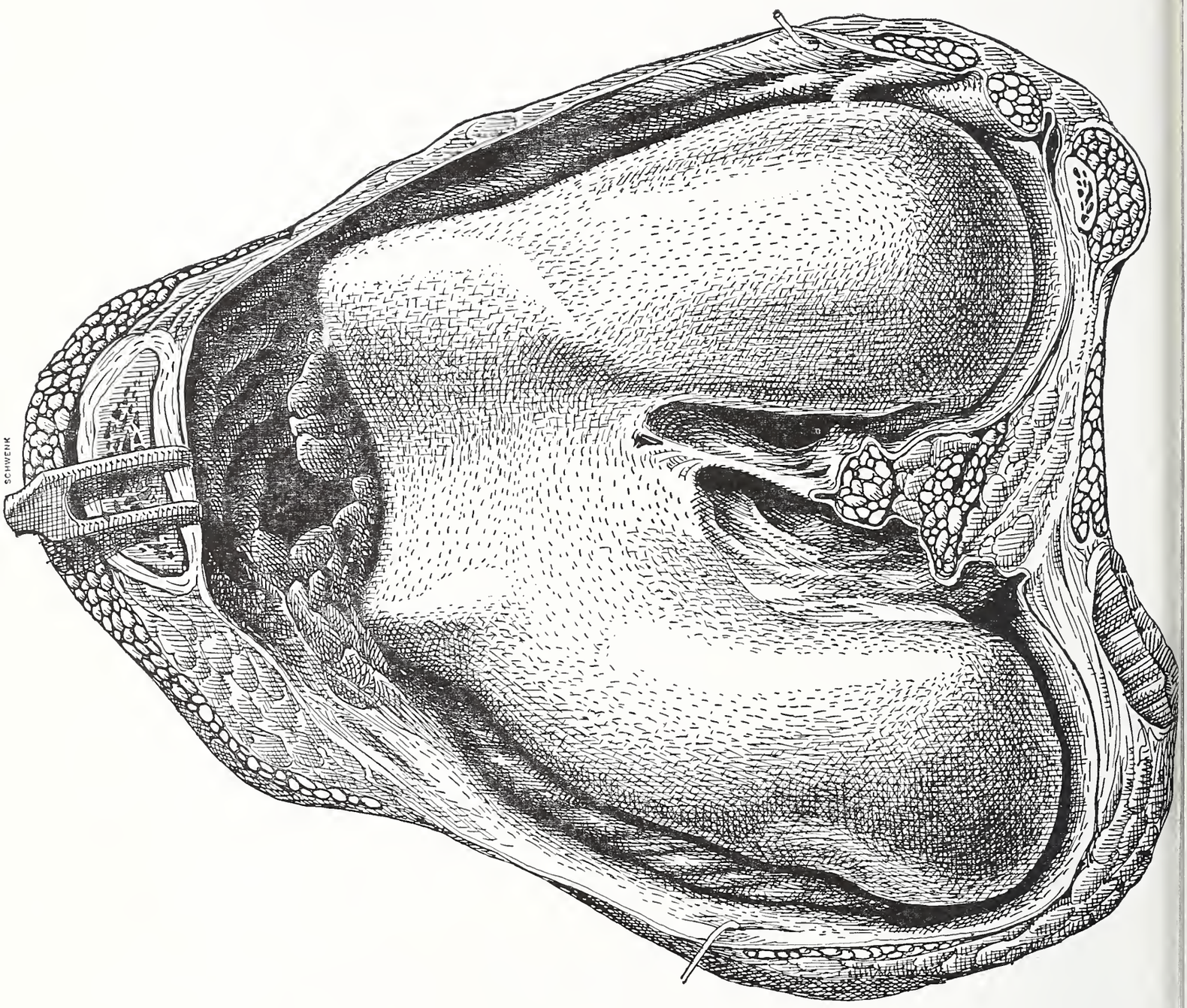
Ectopic Ureteral Orifice, A Case Report, *C. B. Dawson, M.D. and Ralph C. Emmott, M.D.* 188
Cystic Fibrosis of the Pancreas, *Harris D. Riley, Jr., M.D., et al.* 191
Preliminary Observations on Methoxyflurane Anesthesia, *B. R. Goetzinger, M.D., Peter J. L. Welt, M.D. and Walter H. Massion, M.D.* 202
Heart Page, *William W. Schottstaedt, M.D.* 208

medical center

Dean's Message 209
Intravenous Hypertonic Urea As A Diuretic Agent, *William O. Smith, M.D. and John Kyriacopoulos, M.D.* 210
The Computer As A Diagnostic Aid in Medicine, *Edward N. Brandt, Jr., M.D., James A. Hagans, M.D., Ph.D. and William W. Schottstaedt, M.D.* 213
The Biostatistical Unit of the Department of Preventive Medicine and Public Health, *James A. Hagans, M.D., Ph.D. and William W. Schottstaedt, M.D.* 218
Abstracts 220

news

Social Security Showdown 222
Nation's Top Scientists To Take Part in AMA Research Forum 223
Physicians and Selective Service 224
Conference on Medical Education Held by OSMA Committee 224
Radiologists Oppose Aged Plan 225
Tulsa Surgeon Honored 226
Book Review 226
Miscellaneous Advertising 227
Index to Advertisers xlvi
Auxiliary xlvii
The Last Word xlviii



because patients are more than arthritic joints... controlling inflammatory symptoms is frequently not enough!

Even cortisone, with its severe hormonal reactions, can effectively control inflammatory and rheumatoid symptoms. But a patient is more than the sum of his parts – and the joint is only part of a whole patient. Symptomatic control is but one aspect of modern corticotherapy, because what is good for the symptom may also be bad for the patient.

Is Papillary Andenocarcionoma of the Thyroid Really a Cancer?

ANY REMAINING illusion that surgery is an exact science is shattered by researching the literature for THE surgical management of papillary adenocarcinoma of the thyroid. Nowhere does one encounter more emotional display in scientific endeavor than trying to find an exact answer for the management of this disease.

According to some publications from Cleveland, Ohio, is seems that papillary adenocarcinoma is a relatively benign process, seen only in beautiful young women. Furthermore, this disease spreads slowly, if at all, leaving many years for successful surgical intervention. Conventional radical neck dissections are considered irrational by this group. A lobectomy will ordinarily suffice with selective plucking of any conspicuous ripe lymph nodes. Thyroid extract, grains three, daily, is considered of paramount importance.

Contrariwise, the unfortunate New Yorker, who is afflicted by this malignancy soon learns that he has a real cancer. A radical surgical attack is offered the patient as the best means of irradicating his disease. The standard procedure of the Head and Neck Service at the Memorial Hospital for Cancer and Allied Diseases, being total lobectomy on the side of the tumor, isthmusectomy, excision of a portion of the normal lobe and ipsilateral neck dissection. The positive lymph node yield in routine ipsilateral neck dissection with nonpalpable lymph nodes is the surprisingly high figure of seventy per cent. If we are correct in believing that metastatic regional lymph nodes represent a still theoretical remediable stage in malignant disease, it follows that the most complete removal of these nodes at the earliest moment would be a pretty good idea.

Thyroid carcinoma is an uncommon disease, compared to the frequent breast and lung cancers. This fact coupled with its feature of slow growth makes improbable an early statistically significant result from a uniform treatment program. For this reason most of us will continue to rely on the teachings of our ol' chiefs and intuition.

Recently, it was my pleasure to hear a refreshingly scientific approach to the problem of thyroid carcinoma with emphasis upon intra-glandular dissemination. Doctor William Russell of Houston, M.D. Anderson Hospital, had gone to the disease with serial section study of the total thyroid gland and any attached regional lymph nodes. Cutting these preparations serially at 50 micra. he found nearly 80 per cent had extension of the disease beyond the primary focus. Reporting on 79 cases of primary total thyroidectomy, 30 per cent on routine microscopic examination showed dissemination beyond the primary focus. Whereas in 39 subjected to whole organ study, there was 87 per cent with dissemination beyond the primary. In 41 cases of secondary total thyroidectomy 30 per cent showed dissemination by routine studies whereas 91 per cent showed dissemination by whole organ studies. For my money, Doctor Russell has answered the question of the role for total thyroidectomy with a convincing "YES." It is unfortunate that this herculean study did not have conventional radical neck dissections specimens for comparison with the figures of metastasis shown by the Memorial group. Total thyroidectomy has several additional benefits beyond obviating the apparent high incidence of intra-glandular dissemination: (1) removal of the gland may be desirable even if there are known distant metastasis, as it may defer strangulation from occlusion of the vessels and trachea by the local primary disease, (2) it will create a more favorable endocrine environment for palliating metastatic disease, (3) total thyroidectomy reduces the seeding of the primary malig-

nancy. The metabolism of the patient following total thyroidectomy can be controlled easily and varied in efforts to cause functioning of the malignant cells.

The bogy man of total thyroidectomy is an increased incidence of tetany from parathyroid injury. In this series, from M.D. Anderson Hospital, 34 per cent of the patients showed tetany to some extent, which was permanent in 12 per cent. It seems likely that as one's experience of this procedure increases, there will be less likelihood of this undesirable complication. Permanent tetany is not always easy to control.

This study has shown other important features of the disease known as papillary adenocarcinoma. The whole organ studies confirmed the previous observations of the multiplicity of histological types in the same individual with thyroid carcinoma. Papillary adenocarcinoma identified by the initial surgical specimen may recur or metastasize as follicular or even solid cell carcinoma. This feature further dampens my enthusiasm for less complete surgical attempts at ablation of the primary disease.

There are a few things about the treatment of thyroid malignancy upon which there is general agreement. (1) The best treatment of primary thyroid malignancy is surgical removal. Radioisotope therapy, I-131, as well as conventional radiation therapy has been most disappointing. (2) Thyroid extract to abolish endogenous thyrotropic hormone is effective and should probably be used with all cases of thyroid malignancy. (3) The course of the individual patient with papillary adenocarcinoma is extremely variable and unpredictable. Many of these patients will live past the five year milestone with and without any and all forms of treatment, but (4) a substantial number of people will die of this disease within five years of its discovery and several will succumb from this maligancy a full decade after its diagnosis. (5) It can be stated conclusively that surgical treatment of carcinoma of the thyroid remains a subject of considerable controversy. □

BIBLIOGRAPHY

1. Crile, George, Jr., M.D.: "The Endocrine Dependency of Certain Thyroid Cancer and the Danger That Hypothyroidism May Stimulate Their Growth," Cancer, volume 10, pages 1119-1137, 1957.
2. Fraziell, Edgar L., M.D., and Frank W. Foote, Jr., M.D.: "Papillary Cancer of the Thyroid," Cancer, volume 11, pages 895-922, 1958.
3. Martin, Hayes, M.D.: "The Surgery of Thyroid Tumors," Cancer, volume 7, pages 1063-1099, 1954.
4. Winship, Theodore, M.D., and Rando V. Rosvoll, M.D.: "A Study of Thyroid Cancer in Children," American Journal of Surgery, volume 102, number 6, pages 747-752, December 1961.

J.L.S.

AMA ANNUAL MEETING SESSION TO DISCUSS ORGAN AND TISSUE TRANSPLANT PROGRESS

Progress of medical science in replacing defective organs and tissues with healthy "spare parts" taken from donors will be reviewed and evaluated at the American Medical Association's 111th annual meeting in Chicago, June 24-28.

This program, which will contribute scientific understanding to the underlying problems of tissue transplantation, will be covered in a half-day session by five physicians who have pioneered in this field of experimental surgery and research in biochemistry and immunology.

The doctors are: David M. Hume, of the Medical College of Virginia, Richmond; Ernst J. Eichwald, Director of the Laboratory for Experimental Medicine, Montana Deaconess Hospital, Great Falls; Joseph E. Murray, Boston; Donald A. Roth, Veterans Administration Medical Center, Wood, Wisconsin; and William F. Enneking, Chief of Orthopedic Surgery at the J. Hillis Miller Health Center, University of Florida at Gainesville.

The organ transplantation program, sponsored by the AMA Section on Orthopedic Surgery, will be held on Wednesday afternoon, June 27, at McCormick Place.

In announcing the program, Doctor John C. Wilson, Jr., of Los Angeles, secretary of the AMA Orthopedic Section of the Scientific Assembly, said that "the advisability and feasibility of organ transplantation is presently an exciting frontier in medical science, and that the committee is delighted to have these five pioneering physicians share their knowledge with all members of the medical profession." □

Doctor Clinton Gallaher, our immediate Past President has fulfilled his tenure in a most commendable manner. I am sure that I speak for the entire state association in expressing our sincere gratitude for his yeoman service.

My assuming this office of President of our Oklahoma State Medical Association is with humility and servility. My intent and purpose is to bring about the most constructive year possible. However, our success depends upon the active, interested cooperation and participation of our entire membership.

The gravity of our task is made more eminent by the fact that all eyes of the nation are more intently fixed on our standards and our actions at this time.

I have always felt that there are many doctors throughout the state, who are qualified and interested in the various facets of medical administration. Some of these doctors although desirous and desirable, have not taken part in the business of medicine.

Those of you who will take a place and help solve our problems are earnestly needed. I solicit your aid, and ask that you write to State Headquarters making your interest in certain phases known and expressing your willingness to serve on a committee.

I look forward to our working together and trust that as the months proceed the fruits of Oklahoma Medicine will become more and more manifest.

Respectfully yours,

J. Hoyle Parlock, M.D.

Ectopic Ureteral Orifice

A Case Report

C. B. DAWSON, M.D.
RALPH C. EMMOTT, M.D.

Ectopic ureteral orifices are found in many parts of the lower urinary tract. Their location is a major factor in the symptoms which are often bizarre.

THIS IS the report of a case with complete unilateral renal and ureteral duplication and the unusual presenting symptom of urinary retention.

CASE

An unmarried white girl, 18-years-old, was seen November 1, 1961 because of difficult voiding, urgency and dysuria which began 48 hours earlier. Later she developed chills, fever, vomiting and pain in the left lower abdomen.

Her past history was not significant and a particular urologic evaluation failed to elicit any history of urinary incontinence or other genitourinary symptoms.

On examination her temperature was 104° F. There was an ill-defined, tender mass in the left upper quadrant of the abdomen. A #12 F. catheter was inserted into the bladder easily and 200 cc. *residual* urine withdrawn. The urinalysis and sediment stain were normal.

A KUB showed normal bone structure. The soft tissue shadows were not well defined because of overlying gas but the right renal shadow appeared essentially normal. The left renal shadow was enlarged. Intravenous urograms (figure 1) showed a structurally normal right kidney. On the left a small, symmetrical kidney was seen which was displaced laterally and inferiorally. Its architecture was normal except for compression of the superior calices. The left ureter

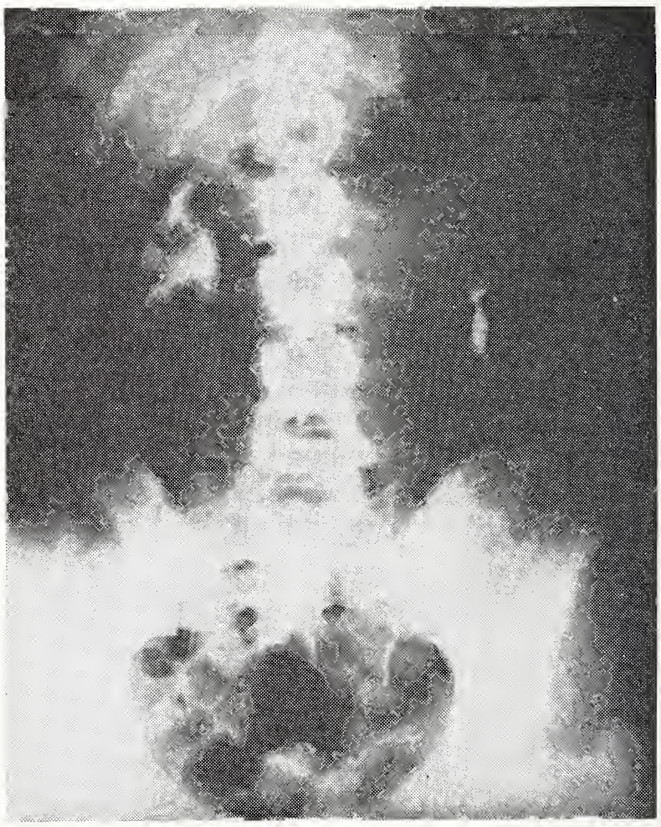


FIGURE 1

was displaced medially in its inferior one-third.

She was hospitalized immediately with a tentative diagnosis of duplication of the left renal collecting system with obstruction and infection in the superior segment. The next day cystoscopy was done under anethesia. A #22 F. panendoscope was passed with some resistance in the mid-urethra. The bladder was normal endoscopically. The trigone was normal and both the right and left ureteral orifices were of normal appearance and in their usual locations. A variety of catheters could not be passed more than four cm. beyond the left ureteral orifice but a bulb-ureterogram showed the same, single, left collecting system compressed by a superior mass that was seen on intravenous urograms.

Meticulous search in the bladder failed to show an accessory ureteral orifice but urethroscopy revealed a soft mass bulging into the left mid-urethra. No opening was seen in this mass and pressure over the urethra vaginally produced no visible drainage.

An indwelling urethral catheter was inserted and the following day the left renal area was explored extraperitoneally. At operation complete duplication of the left collecting system was found. The inferior segment was grossly normal but the superior collecting system was tremendously dilated. A single renal artery entered the renal mass through the superior segment. Hemi-nephrectomy was impossible so the renal mass was mobilized and the pedicle clamped, cut and ligated. Then a left para-median incision in the lower abdomen was made and both ureters were mobilized to the region of the bladder. The ureter draining the inferior kidney was ligated at its junction with the bladder and the dilated ureter from the superior segment was divided two cm. above its ectopic insertion in the mid-urethra. The distal end of the dilated ureter was left open for drainage. The entire specimen was removed intact.

Her post-operative course was uncomplicated and she was dismissed from the hospital on the seventh post-operative day. She voided normally without residual urine and her incisions healed well.

The surgical specimen (figure 2) consist-

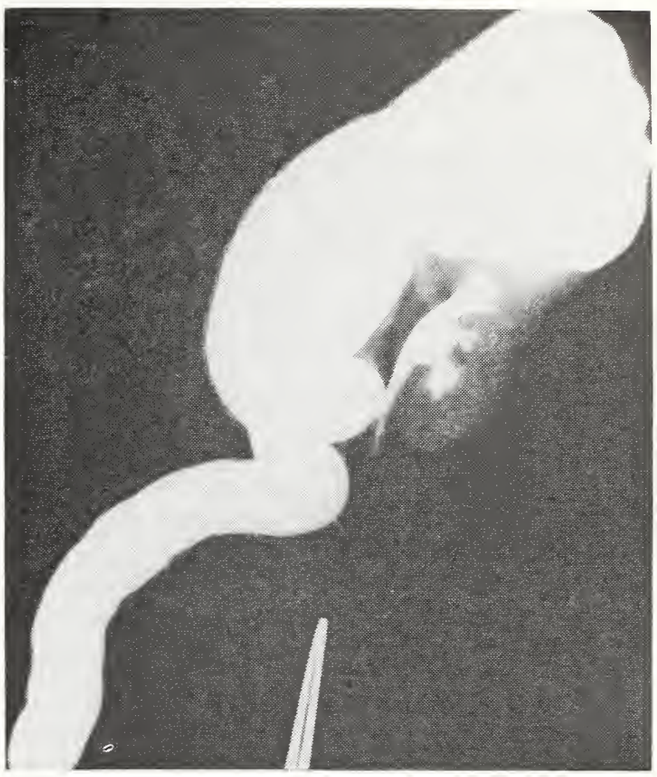


FIGURE 2

ed of a duplicated kidney with a hydronephrotic superior segment and hydro-ureter. The superior segment was distended with thick, purulent material and on histologic examination showed chronic and acute inflammatory changes. The inferior segment was grossly and histologically normal.

C. B. Dawson, M.D., graduated from the University of Oklahoma School of Medicine in 1943 where he is now Associate Professor of Urology. His practice in Oklahoma City is limited to his specialty, urology and he is certified by the American Board of Urology.

Doctor Dawson is a Fellow of the American College of Surgeons and a member of the American Urological Association.

Ralph C. Emmott, M.D., a 1945 graduate of the University of Western Ontario Faculty of Medicine, limits his practice to his specialty, urology. In addition to his private practice, he is Instructor in Urology at the University of Oklahoma School of Medicine and a member of the Attending Staff at the Veterans Administration Hospital in Oklahoma City.

Doctor Emmott is a member of the Royal Society of Medicine and South Central Section of the American Urological Association.

DISCUSSION

Abnormal development of the urogenital tract accounts for 35 to 40 per cent of all congenital anomalies. Ten per cent of the population has some anomaly of the urogenital tract so duplicated kidney is not rare. Campbell[1] states that the condition occurs in one of every 152 persons.

The embryologic reasons for a fused supernumerary kidney with incomplete transverse separation are not clear. In this case associated with complete duplication of the ureter the following origin seems likely. The anomaly began with a duplicated bud of the ureter from the Wolffian duct and as these ureteral buds entered the nephrogenic blastema each branched into a separate collecting system and acquired certain renal units distinct from the other segment. Thus the total number of renal units in a duplicated kidney is the same as in a single, normally-formed kidney. The posterior urethra in the male and most of the urethra in the female also spring from the Wolffian duct which explains why ectopic ureteral orifices are located most commonly in the urethra.

Complete duplication of the ureter occurs in only ten per cent of renal duplications so the preceding hypothesis does not suffice for most cases in which duplication of the collecting system is incomplete and the ureters fuse somewhere between the renal pelvis and the bladder.

This case illustrates several urologic maxims which are well documented in the literature:

1. Renal duplication is more common in females and occurs most frequently on the left side.
2. Urogenital malformations show a striking tendency to multiplicity.
3. An anomalous organ is more prone to disease than a normal one.
4. Only fifty per cent of the cases of renal duplication have a distinct, separate arterial blood supply to the two segments.
5. In complete nephro-ureteral duplications with one ectopic orifice, the ectopic orifice drains the superior segment in ninety per cent of the cases.
6. In complete nephro-ureteral duplications the ureter draining the superior segment opens distally while the ureter draining the lower segment opens proximally. This is known as Weigert-Meyers' law.

This case provides another complication of ectopic ureteral orifices which to our knowledge has not been reported previously, namely urinary retention due to ureteral duplication with an ectopic, obstructed, dilated, infected ureteral orifice in the mid-urethra. □

BIBLIOGRAPHY

1. Campbell, Meredith: Textbook of Urology, W. B. Saunders, Philadelphia, 1957.

528 N.W. 12th, Oklahoma City, Oklahoma

Cystic Fibrosis of the Pancreas*

Doctor Riley: The topic for discussion today is cystic fibrosis of the pancreas. Actually this is not a new disease; however, it is only in relatively recent years that it has been adequately described and that we have gained much knowledge of the disease process. Opinions might vary as to which is the more important, the first description of a disease or the contribution which led to its general recognition. Certainly in the case of cystic fibrosis the contribution of Doctor Dorothy Andersen stands out. In 1938, she described some 49 cases collected from the literature and from the autopsy files of the Babies Hospital and correlated the pathologic findings with the clinical manifestations. Most of these 49 patients were children with the clinical diagnosis of celiac syndrome who died of "pneumonia." She was the first to demonstrate lesions in the pancreas and to correlate the gastrointestinal and pulmonary manifestations. Now, we've come to recognize that this is a fairly common disease; the incidence is generally estimated at one in 1,000 live births. However, as we'll hear more about later, the number of persons who carry the recessive gene for this disease is much higher.

With this brief introduction, let's hear about the case for today, which will be presented by Doctor Roane.

*From the monthly Pediatric Clinico-pathologic Conference held May 16, 1961, conducted by the Departments of Pediatrics, Radiology and Pathology, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

PARTICIPANTS IN CONFERENCE
HARRIS D. RILEY, Jr., M.D.
Professor of Pediatrics, Chairman of Department
JACK ROANE, M.D.
Chief Resident in Pediatrics
JIMMY L. SIMON, M.D.
Assistant Professor of Pediatrics
JACOB L. KAY, M.D.
Assistant Professor of Pediatrics
HOOSHANG TAYBI, M.D.
Associate Professor of Radiology
HENRY N. KIRKMAN, M.D.
Associate Professor of Pediatrics
DOMAN K. KEELE, M.D.
Associate Professor of Pediatrics
EVERETT C. BRACKEN, Ph.D.
Associate Professor of Research Pediatrics and Microbiology
GLEN G. CAYLER, M.D.
Associate Professor of Pediatrics
WILLIAM JAQUES, M.D.
Professor of Pathology, Chairman of Department

Doctor Roane: W. G., a white male, was first admitted to Children's Memorial Hospital at four and one-half years of age when the diagnosis of fibrocystic disease of the pancreas was established. An older sibling had died with the disease four years prior to the patient's admission. The child's general health had been very poor with recurrent respiratory infections which had been treated with numerous antibiotics. He entered the hospital because of fever and respiratory distress. The diagnosis of cystic fibrosis was confirmed by means of the sweat electrolyte test. Because of pneumonia and early con-

gestive heart failure, he was digitalized and started on penicillin and chloramphenicol. He improved on this regime and was discharged to the Children's Convalescent Hospital on tetracycline, pancreatic granules and digoxin. He did well on this program until about one week before his last admission when he developed low grade fever and increase in his cough. The child was readmitted five months after his first admission because of increased respiratory distress, cyanosis and edema.

Examination on admission revealed an acutely and chronically ill white male in respiratory distress with moderate cyanosis and clubbing of the extremities. There was an increase in anterio-posterior diameter of the chest and diffuse rales were present throughout both lung fields. The child had ascites and pitting edema of the lower extremities. Laboratory data showed a hemoglobin of 15.5 gm./100 ml., hematocrit of 57 per cent, white blood cell count of 20,100/cmm. with a shift to the left. Histoplasmin 1:100 and intermediate strength PPD skin tests were both negative. Sweat chlorides were 112 meq./L. Throat cultures showed alpha Streptococci and non-hemolytic Staphylococcus aureus. Three blood cultures were sterile. Roentgenogram of the chest revealed bilateral pulmonary infiltrates and minimal cardiomegaly. The electrocardiogram showed changes compatible with right atrial hypertrophy. It was our thought that the child had cor pulmonale and was in chronic congestive failure. The digoxin and pancreatic granules were continued and the patient was started on erythromycin. After improving initially, both as regards evidence of infection and cardiac failure, his condition began to deteriorate. At the end of the second hospital week erythromycin was discontinued and the patient was started on kanamycin; hydrochlorothiazide was added because of the congestive failure. His course was progressively downhill with an increase in respiratory distress and cyanosis. He expired approximately one month after admission.

Doctor Riley: Are there any questions of Doctor Roane? Doctor Simon, would you start the discussion on this patient, please?

Doctor Simon: This four and one-half-year-old child well illustrates the course of fibrocystic disease of the pancreas. Though cor pulmonale as a terminal event is somewhat unusual, it is seen. The etiology of this disease is still unknown. We know that there are abnormal mucopolysacchardies in both the duodenal contents and in the urine. This disease is most likely a Mendelian recessive, but interestingly enough, it has never been seen in association with mongolism. Both sexes appear to be equally affected.

As well illustrated in this patient, the most common presenting manifestation is repeated pulmonary infections. In Shwachman's series, 80 per cent of children with fibrocystic disease had pulmonary and intestinal symptoms before one year of age. In another series of 550 patients, all eventually developed pulmonary involvement except for two per cent who had primary cirrhosis of the liver with no other manifestations of the fibrocystic disease while living. Only about one per cent develop portal hypertension as a sequel to the cirrhosis. Rectal prolapse occurs in about 20 per cent of these children at one time or another. Virtually all of these patients exhibit some degree of growth failure. About ten per cent of patients with cystic fibrosis present with meconium ileus at birth. A finding which has been reported recently in cystic fibrosis is the ocular involvement. Some patients with progressive pulmonary disease develop venous engorgement and edema of the optic discs which is accompanied in some instances by hemorrhage and in others by cystic changes in the macula.

In regard to diagnosis, the fully developed, typical clinical picture consists of severe chronic pulmonary infections, emphysema, malnutrition, polyphagia and steatorrhea and is readily recognized by the physician familiar with the disease. Many different laboratory techniques and tests have been devised for the study of the disease. I will not attempt to review all of these and will mention those currently in use. Test for the presence of trypsin in the stool and study of duodenal enzymes obtained by aspiration are useful but have been largely replaced by the sweat test because of its greater reliability and ease of performance. Children with fibro-

cystic disease have an increased concentration of both sodium and chloride in their sweat. In our laboratory values greater than 80 meq./L. are indicative of cystic fibrosis. The more recent tests involve the use of pilocarpine and iontophoresis which obviates the hazards reported from encasing children in plastic bags to induce sweating. Recently Shwachman reported on four children less than three days of age who had the clinical picture of meconium ileus, later confirmed at operation. Using the iontophoresis method he was able to demonstrate sweat chlorides of 126, 145, 93 and 112 meq./L. respectively in four of these neonates. It would appear that the sweat test using iontophoresis is reliable even in newly born infants and should be carried out, if possible, in all patients in this age group admitted with the clinical picture of obstruction. Not all workers agree on the value of the sweat electrolyte test in the neonatal period; however, most do agree that the diagnosis of cystic fibrosis should not be made solely on the basis of elevated sweat electrolytes without accompanying clinical manifestations. A word of caution—if you do not have the iontophoresis test available, care must be exercised in putting children in bags to to sweat them as deaths have been reported with this method.

I will leave the details of therapy to subsequent speakers; however, it should be noted that with these newer methods of treatment, children with cystic fibrosis are certainly surviving longer although insufficient time has elapsed to assess the final effects of newer methods of diagnosis and management.

Doctor Riley: Doctor Simon has given us a good review of the overall picture of cystic fibrosis. Doctor Kay will you outline the manifestations in the newborn period?

Doctor Kay: In the newly born infant, meconium ileus is the most frequent manifestation of cystic fibrosis of the pancreas. di Sant'Agnese has estimated that ten per cent of individuals with cystic fibrosis of the pancreas are born with intestinal obstruction due to inspissation of thick, ropy, tenacious meconium. This abnormal meconium is usually firmly adherent to the mucosa of the distal portion of the ileum, but may be more proximal in the small intestine or may extend into the colon. The characteristics of the abnormal meconium in neonates with symptomatic cystic fibrosis of the pancreas, have been attributed to the absence of pancreatic enzymes. By the addition of human serum albumin to meconium from normal newborn infants, Young and co-workers were able to produce a viscid, tenacious material, similar to the meconium of infants with meconium ileus. Based on their observations, it was suggested that the proteins of amniotic fluid, unhydrolyzed because of the lack of sufficient pancreatic enzymatic activity, mix with components of normal meconium to produce the abnormal, viscid meconium characteristic of meconium ileus.

In the majority of infants the clinical signs of meconium ileus are progressive abdominal distention, vomiting and failure to pass meconium stools. Zachary has stated that more than 90 per cent of newborns pass meconium within the first 24 hours and that another seven to eight per cent passed their first meconium stool in the next 12 hours after birth. Kramer and Scherry found a slight delay in the passage of the first meconium stool by normal prematures when compared to full-term infants. Eighty per cent of their 200 premature infants had their first stool by 24 hours and 94 per cent by 48 hours after birth. Air traverses the intestinal tract rapidly and may appear in the distal segments of the bowel within five to six hours after birth. Individual variations make roentgenographic diagnosis of obstruction hazardous before 24 hours of life. Repeat films may be helpful during the first 24 hours of life to define failure of progression of air through the gut. As previously mentioned, such infants, whenever possible, should have a determination of sweat electrolytes.

Major among the conditions to be considered in differential diagnosis of meconium ileus are: meconium peritonitis; congenital malformation of the intestinal tract including atresia, stenosis, reduplication, and malrotation; meconium plug syndrome; congenital megacolon; and psuedo-obstruction due to drug effect or central nervous system disturbances. Ano-rectal plugs of meconium in the newborn infant may also produce ab-

dominal distention, vomiting and absence of meconium stools. Clatworthy and associates in 1956 described nine such cases. In four of these infants digital examination of the rectum induced passage of a firm mass of meconium followed subsequently by normal stools. In two patients, similar results were produced by diagnostic barium enemas, and in an additional two patients passage of the meconium plug followed peroxide enemas. Laporatomy and colostomy were performed in two of the nine patients and normal ganglion cell distribution was found in each case. Other authors have reported similar plugs of meconium occurring in infants with congenital megacolon.

Other manifestations of cystic fibrosis of the pancreas are rare in the neonatal period. Nevertheless, the diagnosis of cystic fibrosis of the pancreas must be considered in infants with failure to gain weight in spite of adequate intake, and in those with large, frequent, and fatty stools. Persistent pneumonitis and atelectasis after the first week of life should also alert the physician to the possibility of fibrocystic disease. In addition, our attention has recently been drawn to the association of persistent neonatal jaundice with cystic fibrosis of the pancreas.

Doctor Riley: Thank you, Doctor Kay. Doctor Taybi, will you discuss the roentgenographic aspects of this disease, particularly as it relates to the patient under discussion.

Doctor Taybi: This patient had several films taken during the course of his hospitalization here and these show some of the roentgenographic manifestations of this disease. Emphysema is present and, during the course of hospitalization, he developed cardiac enlargement which probably was due to cor pulmonale. In addition, this patient had peribronchial cuffing which is one of the manifestations of this disease and indicates the presence of fibrosis and disease in the peribronchial region. This patient also demonstrates chronic fibrotic changes in the lung and probably bronchiectatic changes. We can divide the radiographic manifestation of cystic fibrosis of the pancreas in three major groups. The first one is the chest findings. I mentioned emphysema, but some patients may have pulmonary collapse by abscess formation, and bronchiectasis. Pneumothorax and cor pulmonale, which this patient had, may also supervene. Also, a higher than expected incidence of fungus infection—in particular, actinomycosis—has been reported in co-existence with cystic fibrosis of pancreas. The second group of radiographic manifestations are in the digestive system and abdomen. Esophageal varices have been shown in these patients who have cirrhosis. Another finding may be calcification of the pancreas. In the films of the abdomen calcification in the peritoneum due to meconium peritonitis may be demonstrated. Rectal prolapse was mentioned before but intussusception is also known to occur in this disease, the leading point usually being the appendix or ileum proximal to that area. It is not uncommon to find microcolon associated with meconium peritonitis and meconium ileus. Microcolon is more pronounced in this disease than in other conditions with which it is associated. Later on, functional disturbance of the small bowel may occur. Recently, it was reported at the Society for Pediatric Radiology that barium enema studies in these children showed an abnormal mucosal pattern. This was not accepted by everyone present but it is one of the manifestations to be considered. The third group of findings are bone manifestations and include pulmonary osteoarthropathy which we all know is very rare in childhood but could occur in children with cystic fibrosis who have had long standing disease in the lung. Osteoporosis is a finding in long standing cases.

Doctor Riley: Doctor Taybi, does segmental atelectasis occur commonly in this disease?

Doctor Taybi: Segmental atelectasis, emphysema or lobar atelectasis could occur and we know that sometimes, radiographically, at least, only one lobe may be involved. This was the basis for lobar resection, which I do not think is too popular anymore. At least, some people do not accept it as a beneficial procedure.

Doctor Riley: Thank you, Doctor Taybi. Doctor Kirkman, will you discuss the genetic aspects?

Doctor Kirkman: The etiology of fibro-

cystic disease is an hereditary one. The disease usually manifests itself only in the patient and in some of his siblings. Evidence at several medical centers has indicated that this is an autosomal recessive disease, with a chance of one in four of involvement of any siblings who may be born subsequent to the discovery of the affected patient. The parents usually appear clinically normal. The fact that they both carry the abnormal gene for this condition can be determined by a laboratory search for more subtle expression of the disorder. Carefully performed sweat chloride determinations will reveal that many of these parents have values which are not quite as high as those of the affected children, but are often outside of the range of normal. In essence, then, this gene is passed down from both sides of the family. The gene does not fully manifest itself clinically as long as it is present in a single "dose," but when a child receives a "double dose" of the abnormal gene, one from each parent, the disease is fully expressed.

It is interesting to reflect upon two possibly related facts. Fibrocystic disease is extremely rare in Negroes. Some laboratories have reported that the sweat chloride in Negroes is normally lower than that of Caucasians. One wonders if the capacity to excrete a sweat of low salt concentration affords some protection or advantage in tropical countries. Conversely, the inability to excrete sweat of low chloride concentration could be a disadvantage in such geographical areas and racial groups, thereby causing a reduction in the number of persons carrying the gene for fibrocystic disease. Failing to support this thesis, however, is my own recollection of fibrocystic children of Mediterranean and North African decent.

Doctor Riley: Thank you. The gastrointestinal aspects especially the malabsorptive disturbance constitute an important part of this disease. Doctor Keele, will you now comment on this point?

Doctor Keele: One of the characteristic features of cystic fibrosis of the pancreas is the malabsorption component of the disease which may result in several different clinical pictures. Frequently these children fail to regain their birth weight and do poorly as infants. Later in life they may have a voracious appetite with abnormal stools, the stools being foul smelling, large, and frequent. This is accompanied by abdominal distention and malnutrition. Rectal prolapse has frequently been diagnosed in cystic fibrosis of the pancreas. The retarded growth and development can certainly be due to the malabsorption syndrome but may also be due to chronic pulmonary infection. Involvement of the pancreas may not be present at birth, however, and it may be several months to a year before obvious malabsorptive symptoms occur. It has been shown that some 16 per cent of patients showed minimally reduced or normal pancreatic function. It should be kept in mind, then, that children with chronic pulmonary disease may have cystic fibrosis of the pancreas without any evidence of involvement of the pancreas; therefore, determination of sweat electrolytes should be carried out in such patients.

The pathophysiology of the pancreatic involvement is interesting. Farber first postulated in 1944 that mucus with an abnormal physiochemical characteristic caused the obstruction of pancreatic and other ducts with subsequent dilatation of the secretory acini and fibrosis of the parenchyma. In 1949, di Sant'Agnese and his group showed that the mucopolysaccharides from the duodenal contents of patients with cystic fibrosis of the pancreas were easily denatured and rendered insoluble in water. They further found that the carboyhdrate moiety of the mucopolysaccharides of cystic fibrosis differed markedly from normal and postulated that this physiochemical change might cause irreversible precipitation of the mucoprotein in organs such as the pancreas, liver, and others, and by so doing initiate the chain of clinical events.

In addition there may be another mechanism in the malabsorption in cystic fibrosis of the pancreas. Reemtsma, *et al.* by means of I^{131} labeled fat and fatty acid, have shown marked impairment of neutral fat absorption and moderate fatty acid absorption impairment. Impairment was seen in two patients with normal tryptic activity in the duodenal aspirate. In another group of patients with pancreatic deficiency the fatty acid absorption was normal but the neutral fat absorption was low. On this

basis, they suggested that mechanisms other than only pancreatic deficiency are involved in the malabsorption of cystic fibrosis of the pancreas.

Some of the other enzymes are also reduced but for clinical purposes the decrease in trypsin in the duodenal fluid is the most important. The malabsorption syndrome rerults in a fecal loss of 20-65 per cent of the dietary proteins. Also there is a decrease in fat absorption resulting in a 20-60 per cent loss of the dietary fat in feces. In addition, vitamin A and K are poorly absorbed. Clinical vitamin A deficiency and a prolonged prothrombin time have been reported in cystic fibrosis. The water soluble vitamins are all absorbed normally as are carbohydrates.

The treatment of the malabsorptive component of this disease consists of: 1) a high caloric, high protein diet slightly reduced in fat content. Infants should receive about 75 calories/lb./day, 2) pancreatic enzymes as a dietary supplement may be helpful in some patients, 3) and the water soluble vitamins should be given in twice the physiologic dose.

Doctor Riley: Thank you Doctor Keele. The importance of pulmonary involvement and particularly infection as the major cause of disability and fatal termination in cystic fibrosis has been thoroughly documented and emphasized. We also know that the usual offending pathogen in these patients is a staphylococcus. Why this particular organism plays such an important role in cystic fibrosis is not clear. As Doctor Eichenwald has recently summarized, there are several questions that we should try to answer in this regard. (1) Is it that all types of chronic pulmonary disease with bronchial obstruction have a propensity for invasion by the staphylococcus? (2) Does this organism have some particular ability to adapt to antimicrobial agents, thereby reducing the therapeutic effectiveness of the antibiotic? (3) Is the strain of staphylococcus, particularly of a more virulent nature, specifically attracted to these patients? (4) Is it that these children have some defect in host defense which permits a ubiquitous pathogen to invade the respiratory tract and produce such disastrous results?

I have raised several questions relating to the infections in these patients, Doctor Bracken, will you comment on some of the bacteriologic problems in cystic fibrosis?

Doctor Bracken: As Doctor Riley has mentioned, the immediate cause of death in cystic fibrosis usually is respiratory tract infection, and the infections predominantly are of staphylococcal etiology. Other microorganisms frequently associated with cystic fibrosis (in descending order of frequency of occurrence) include Pseudomonas, Proteus, coliform organisms, and Hemophilus species. Interestingly, *Diplococcus pneumoniae* seldom is found.

Many conjectures have been made concerning the association of staphylococci with cystic fibrosis and the apparent virulence of the organisms in these patients. At least two speculative explanations appear to be logically applicable. Do mucous secretions serve to shield and protect the organisms from the host's natural defenses? We all are familiar with the role of the mucopolysaccharide capsule of the pneumococcus in enhancing the virulence and resistance to phagocytosis of the organism. Is it not likely that mucous secretions (also mucopolysaccharides) provide "artificial" capsules for the staphylococci—giving the organisms the same advantages as the naturally encapsulated pneumococci? In this regard we may also recall that, in experimentally induced bacterial infections, inoculations of bacteria suspended in a hog mucin menstruum have considerably greater pathogenicity than a similar inoculation in the absence of mucin.

In a secondary, closely related question concerning the relationship of mucous secretions with impairment of natural host defenses, we may ask whether the staphylococci, safely buried in a bed of mucus, are beyond the reach of antibiotics. It seems likely that this factor obtains, and at least partially explains the apparent increased antibiotic resistance of staphylococcus strains encountered in these infections.

Finally, it must be recognized that a severely debilitated patient is far more susceptible to invasions and establishment of infections by adventitious bacteria than a healthy person whose host defenses have not deteriorated disastrously. The ubiquitous

staphylococci are there "fustest with the mostest" when conditions favor invasion and implantation.

Doctor Riley: Probably the greatest therapeutic problem in this disease concerns the management of the pulmonary involvement. There are two major aspects of this which must be considered. First, the mechanical effect of the viscid secretions and, second the added effect of infection.

It is generally agreed that intensive therapy directed against pulmonary involvement should be instituted as soon as any pulmonary involvement is found. The presence of excessive amounts of thick, abnormal mucus in the respiratory passages results in impaired removal of debris and bacteria with stagnation of secretions which leads to chronic bronchiolar infection and pneumonia. This is followed by patchy emphysema, atelectasis, and pulmonary obstruction. Both chemical and physical means can be employed to decrease or at least to prevent an increase in the viscosity of pulmonary secretions. These include the use of expectorants such as potassium iodide, humidification, and nebulization (aerosol) therapy. By the latter techniques bronchodilators, expectorants, wetting agents and antibiotics may be administered. Most clinics use an aeresol solution of ten per cent propylene glycol in saline. An important part of the treatment of the pulmonary lesion is postural drainage and this should be employed in conjunction with each aerosol treatment. Specific breathing exercises (as taught by an experienced physical therapist) are usually helpful in clearing the pulmonary tree as well as improving the pulmonary function. In this regard, it should be noted that physical activities such as running or active play often are more effective in helping the patient to raise sputum than other means and confinement to bed should be avoided insofar as possible. An effective method of removal of secretion is to have the patient sleep in an improvised tent in an atmosphere saturated with mist. It is probably desirable that all patients with significant pulmonary involvement follow this procedure. These tents can be constructed easily and relatively economically for home use. Recently, the use of a three per cent solution of sodium chloride as mist therapy has been reported as showing encouraging results. Hemoptysis due to the use of this agent has recently been observed and it is probably wise to restrict the use of this solution to no longer than two consecutive weeks and only when the child is hospitalized. Intermittent positive pressure breathing therapy has been helpful in certain selected patients but should be used only when facilities are available for measuring changes in lung volume.

In the usual patient with cystic fibrosis these measures to combat the abnormal viscid mucus should be employed not only in the hospital but also consistently at home if they are to be effective. A word of warning should be mentioned concerning the disastrous effects of liquifying the secretions too rapidly. This can result in the patient actually drowning in his own secretions unless adequate suction apparatus is readily available. Patients with cystic fibrosis may have respiratory tract allergies and appropriate management of these are indicated just as in other patients.

The prevention and treatment of pulmonary infections is of utmost importance. No real success in the treatment of this disease was achieved until antibiotics became available and with advances in antimicrobial therapy the prognosis of cystic fibrosis has steadily improved. As has already been pointed out, the organism initially infecting the lungs is almost always a coagulase-positive Staphylococcus aureus and, for various reasons, a higher percentage of children with cystic fibrosis harbor this organism than do children of comparable age who are entirely healthy or who have chronic bronchial asthma. Unfortunately, the organism usually rapidly acquires resistances to antibiotics. Other common pathogens in these patients are the gram-negative bacilli, especially Ps. aeruginosa, proteus species and A. aerogenes, all of which are notoriously difficult to eradicate. The extreme viscosity of the bronchial secretions further complicates the task of ridding the lungs of infection. Thus, we have a vicious cycle: the primary defect is in the secretion of abnormal mucus, which favors the intensified development of pulmonary infection. This, in turn, intensifies the secretion of mucus.

The patient with cystic fibrosis should be followed at regular and frequent intervals in regard to the presence of pulmonary infections. Deviations in the growth curve or an increase in night coughing without fever may presage the development of an acute exacerbation of pulmonary infection. When possible, sputum cultures and other methods should be used to isolate pulmonary pathogens which may then be subjected to in vitro antibiotic susceptibility studies. Although the results of susceptibility patterns of isolates from sputum or from the nasopharynx may be, at times, a useful guide, all investigators have had the experience of being disappointed in trying to select the appropriate antibiotic on the basis of these results.

Most investigators agree that antimicrobial agents are indicated if pulmonary involvement is present, that therapeutic courses of antibiotics are indicated during acute exacerbations of pulmonary infection and that they should be used to attempt the halting of progressive deterioration. However, the exact manner in which antibiotic therapy should be used is not settled.

In some clinics a single antibiotic agent or combination of agents is administered continually. Advocates of this method are also further subdivided in their feeling as to whether to use a single agent for long periods or a rotation system in which the antibiotic is changed at regular intervals. Others treat vigorously the pulmonary infection for a period of four to 12 weeks, then terminate antibiotic therapy to follow the patient at weekly intervals by bacteriologic means. If laboratory and clinical evaluation indicates the presence of infection, intensive antibiotic therapy is restarted and continued for at least two weeks and usually for a month.

In those clinics where antimicrobial therapy is given continuously, 10-15 mg./kg./day of a broad spectrum antibiotic such as chlorotetracycline or oxytetracycline is given orally if the pulmonary infection is of a mild degree. For the patient with more severe pulmonary involvement, the dose is increased to 40-50 mg./kg./day. In new cases or as treatment for acute exacerbations, treatment specifically directed against the staphylococcus should be utilized until it can be proved that the infection is due to another pathogen. In such instances it may be desirable to administer the drug parenterally. Some of the specific antistaphylococcal agents such as vancomycin, kanamycin, or methicillin may be particularly useful. When the patient is quite ill clinically, many clinics administer antibiotics by the aerosol as well as the oral or parenteral route.

Two major problems in the treatment of the patient with cystic fibrosis are the appearance of antibiotic-resistant strains of staphylococci and the emergence of Pseudomonas as the predominant flora. Once the Pseudomonas becomes established, it is very difficult to eradicate. It may be that the development of colymycin will play a real role in the management of pseudomonas infections in this disease.

Doctor Cayler would you discuss cor pulmonale in cystic fibrosis, which our patient demonstrated?

Doctor Cayler: The term cor pulmonale which is used clinically is generally poorly understood. Cor pulmonale means hypertrophy or dilatation of the right ventricle due to pulmonary artery hypertension which is secondary to pulmonary disease. Clinical or pathologic evidence of myocardial insufficiency may occur as an acute complication or as a late result of cor pulmonale. Minimal increases in pulmonary artery pressure cause only minimal or no clinical symptoms or signs and hence early cor pulmonale is not usually diagnosed. Likewise, a minimal increase in right ventricular size or wall thickness caused by mild pulmonary artery hypertension cannot usually be detected by the pathologist at post-mortem examination. Probably the earliest clinical evidence of cor pulmonale is electrocardiographic evidence of right ventricular and/or right atrial hypertrophy; however, as Harvery, *et al.* point out, EKG changes do not occur with any significant frequency until there is moderate pulmonary artery hypertension.

The major cause of death in children with cystic fibrosis is not myocardial insufficiency but pulmonary insufficiency due to progressive atelectasis, emphysema, and pulmonary infections. The true incidences of cor pulmonale is not known for these patients since

pulmonary artery pressure measurements have not been made. Although reports vary as to the clinical and pathologic incidence of cor pulmonale in these patients, the incidence is generally lower than most physicians believe. Nadas et al. found clinical and pathologic evidence of cor pulmonale in a series of patients with severe cystic fibrosis in the following frequency:

1. Seven per cent with congestive heart failure (Clinical).
2. Five per cent with cardiac enlargement (X-Ray).
3. Fourteen per cent with right ventricular hypertrophy (EKG).
4. Six per cent with congestion (Autopsy).

The incidence found by Royce was slightly higher. He noted that 50 per cent of the patients coming to autopsy with cystic fibrosis had clinical congestive heart failure. Perhaps the severity of the disease and the age of onset explains the differences between these two observations. Nadas found that all of his patients who developed cor pulmonale had the onset of symptoms of cystic fibrosis before the age of six months and that 30 per cent of those patients with the onset of symptoms before the age of six months developed cor pulmonale. It was felt that not only the early age of onset of disease, but also the duration of the disease governed the incidence of cor pulmonale and that, as longevity increased with better medical management of the pulmonary insufficiency, perhaps the number of patients developing cor pulmonale will also increase.

The development of clinical evidence of congestive heart failure does not necessarily indicate an extremely poor prognosis. Of the three patients studied by Nadas et al. who developed congestive heart failure, only one expired during the course of the study and only three of the total of eight patients with clinical evidence of cor pulmonale expired. When congestive heart failure occurs in a patient with cystic fibrosis, vigorous anticongestive therapy should be initiated. However, therapy for congestive failure should be an adjunct to and not a substitute for continued vigorous treatment of the basic underlined pulmonary problem and pulmonary infection.

Earlier clinical diagnosis of cor pulmonale will result if we pay particular attention during our physical examination to the intensity of pulmonary valve closure, the presence of abnormal xyphoid or pulmonary artery pulsations, and the presence of the murmur of pulmonary insufficiency. All patients should have electrocardiograms taken and those with progressive disease should have serial EKG's. Based on the experience of Johnson et al. it would be expected that at least 50 per cent of those patients with pulmonary artery mean pressures above 30 mm Hg would show right ventricular hypertrophy on the electrocardiogram. I believe we should seriously consider performing right sided cardiac catheterizations in order to measure pulmonary artery pressure and study right sided hemodynamics in patients with cystic fibrosis in order to determine the accurate incidences of cor pulmonale and its severity. I also believe a determination of pulmonary artery pressure would be of practical importance in determining the effectiveness of medical therapy for the pulmonary disease and in deciding which patients are in borderline decompensation and which patient might develop congestive heart failure. Of course, this would have important prognostic significance.

Doctor Riley: Thank you Doctor Cayler. Doctor Jaques, will you discuss the pathologic findings in this case as well as make any other comments you desire?

Doctor Jaques: The most significant pathologic findings in this case were: On opening the peritoneal cavity, there was approximately 200 ml. of clear yellow serous fluid. There was no excess fluid in the other serous cavities. The heart weighed 270 gm. and showed predominately right ventricular hypertrophy with the right ventricle measuring one cm. in thickness. The right lung weighed 490 gm., the left 430 gm. They revealed a diffuse induration with multiple small and large nodular, firm areas. The bronchial tree contained copious amounts of thick purulent exudate in the lumina and showed moderate ectasia. Surrounding many of these bronchiectatic areas, there was induration consistent with bronchopneumonia. The liver weighed 1200 gm. and the surface was slightly nodular. On cut surface, the

lobular architecture was obliterated by an apparent increase in fibrous connective tissue. The bile was noted to be quite viscid. The pancreas weighed 60 gm. and revealed an increase in connective tissue.

Microscopic examination showed changes characteristic of cystic disease of the pancreas. The pancreas revealed numerous dilated acini and ducts and increased interstitial connective tissue and many of the lumina were filled with viscid secretion. A section through the second portion of the duodenum and head of the pancreas shows involvement of both the Brunner's glands and pancreatic acini by a similar process (figure 1).

The liver revealed numerous dilated bile ducts containing inspissated bile. This was associated with a marked ductular proliferation in the juxtalobular areas producing some distortion of the liver parenchyma and showing changes characteristic of biliary cirrhosis.

Microscopic sections of the lungs revealed marked bronchiectasis, inspissated secretion and areas of recent and organized pneumonia. As the mucous glands of the larger bronchi were examined, there was noted dilatation of these structures, flattening of epithelium and inspissation of secretions as depicted in figure 2.

Doctor Riley: This case appears to show all of the characteristic pathologic findings of cystic fibrosis of the pancreas. Is this correct, Doctor Jaques?

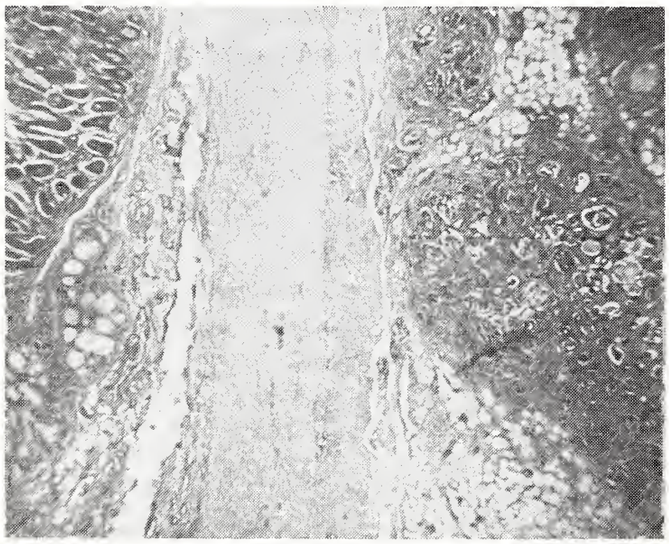


Figure 1. Section from duodenum and pancreas. Dilatation of Brunner's glands and pancreatic acini with inspissated secretion. Hematoxylin and Eosin x 400.

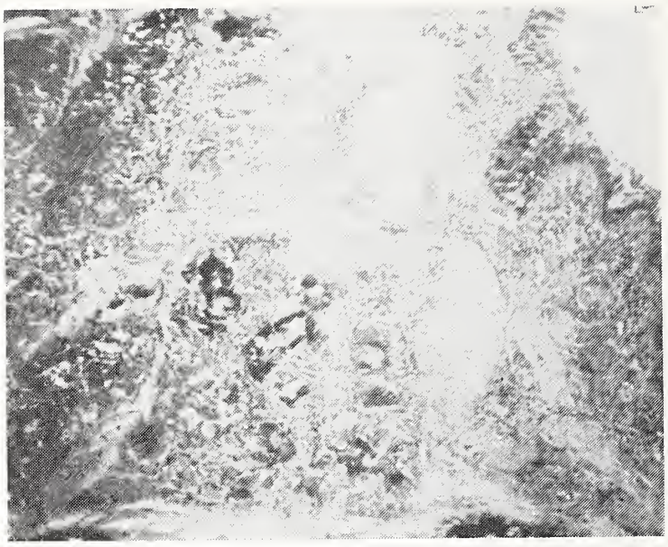


Figure 2. Section of Lung. Bronchial glands are dilated with inspissated secretion and the associated inflammatory response is evident. Hematoxylin and Eosin x 400.

Doctor Jaques: Yes, these necropsy findings are entirely characteristic of this disease.

Doctor Riley: There are certain points that have not been covered that I would like to touch on briefly. There are few diseases in which the need to individualize the management of each patient is more important. Each of these patients, while they have many features in common, differ in many ways and to be successful the program must be adapted to the individual child.

It should be noted also that cystic fibrosis is not an all or none disease. We know that there are partial degrees of pancreatic insufficiency and that some of these patients may not manifest the total picture of cystic fibrosis for long periods or if at all. We now know that the disease is being recognized for the first time in young adults.

Heat prostration is due to the excessive loss of electrolytes in the sweat during either hot weather or hyperpyrexia. From a prophylactic standpoint, liberal salting of foods all year round should be encouraged. During hot weather, the addition of two to four grams of salt per day is desirable. If heat prostration occurs, it is important to initiate replacement of extracellular fluid volume by the intravenous administration of normal saline. A dose of 10 ml./kg. of body weight over a period of 15 minutes is usually ade-

quate and can be followed by the usual regimen of fluid therapy.

These children should be protected from unnecessary exposure to infection. Routine immunizations against pertussis, diphtheria, tetanus, poliomyelitis, and smallpox should be performed at appropriate ages. In particular, immunity against pertussis should be maintained by recall injections at regular intervals. Children with cystic fibrosis are candidates for influenza vaccine. Recently, several children with cystic fibrosis have been immunized against measles. Such patients obtained a satisfactory antibody response without any greater than expected untoward reaction to live-virus measles vaccine. With the promising developments in the field of measles vaccine, it is probable that all of these children should be actively immunized against measles in the future. Until active immunization against measles becomes available, all such children who are exposed to rubeola should be given appropriate doses of gamma globulin.

Kindergarten, school, and other activities should be restricted only as indicated by the patient's tolerance. An important goal in the total management of patients with cystic fibrosis is to have them lead as normal a life as possible. While time does not permit a lengthy discussion of the importance of management of psychologic problems of these children, it cannot be overemphasized, as with the case with many chronic diseases, that this is of paramount importance.

Parent education is another important aspect of total management. Cystic fibrosis might be likened to diabetes in that it cannot at present be cured and its treatment requires intelligent cooperation by the patient and his family. The parents and the child himself when he is old enough must have a clear understanding of the disease in order to carry out medical recommendations properly. The formation of parent's groups in which families of these children can ask questions, discuss mutual problems, and join together in a common interest is often extremely helpful. The National Cystic Fibrosis Research Foundation has organized many such chapters around the country and these have proved extremely helpful for the parents as well as providing important sources of support for research and care of these children. □

800 N.E. 13th, Oklahoma City, Oklahoma

FRESH PATHOLOGY TO BE A MAIN FEATURE AT AMA ANNUAL MEETING IN CHICAGO

Sixty Chicago and Illinois pathologists are now preparing to collect approximately 300 specimens for an exhibit at the American Medical Association's 111th annual meeting in Chicago, June 24-28.

These specimens of unusual pathology will be brought in each morning of the five-day meeting from hospitals and laboratories in the Chicagoland area. Dry ice is used under each tray to preserve the specimens. Specimen collections have now begun and they will be quick frozen to preserve them until the convention opens in McCormick Place.

Doctor Samuel A. Levinson, chief pathologist at the L. A. Weiss Memorial Hospital and professor of pathology emeritus at the University of Illinois College of Medicine, is chairman of exhibit planning. For the first time at an AMA meeting, Doctor Levinson and his colleagues are utilizing the teaching facilities of the five Chicago medical schools, whose pathologists are cooperating in setting up the exhibit.

The specimens will represent tissue removed in surgical operations as well as tissue and organs removed in autopsies. File cards will carry all the necessary diagnostic information about the patient and his condition, whether living or dead.

Times change and the fresh tissue exhibit today is not only more extensive, but with better arrangement and collection of specimens and meticulous planning, it gives the doctor more opportunity for study through actual visualization. Also, the exhibit is more encyclopedic in its horizon. Since the specimens are fresh each day they do not change color or lose texture, an important consideration in the study of tissue structure of organs and the nature of the changes in illness. The exhibit in the past several years has had the highest attendance of all studies and demonstrations at AMA Annual Meetings.

Preliminary Observations on METHOXYFLURANE ANESTHESIA

B. R. GOETZINGER, M.D.
PETER J. L. WELT, M.D.
WALTER H. MASSION, M.D.

Methoxyflurane is a halogenated, unsymmetrical ether, and a potent, nonexplosive agent which can produce any degree of muscle relaxation. It was administered to a variety of surgical patients at the University of Oklahoma School of Medicine in order to determine its usefulness in clinical practice.

INTRODUCTION

METHOXYFLURANE (Penthrane) is one of a series of fluorinated hydrocarbons which have been studied in recent years to determine their usefulness as anesthetic agents.[15] Of the many compounds synthetized and studied in animals only a very few have been sufficiently promising to warrant clinical trials in man. Methoxyflurane has shown definite promise and has been the subject of many animal experiments and clinical studies in man.[1, 2, 4, 6, 7, 9, 10, 14, 16, 17, 18, 20] This report covers preliminary observations with methoxyflurane at the University of Oklahoma Medical Center. In view of the small number of cases, no attempt was made to subject the data to statistical evaluation.

CHEMICAL AND PHYSICAL PROPERTIES

Methoxyflurane is 2,2-dichloro-1, 1-difluoroethyl methyl ether with the following formula:

```
   Cl - F       H
H  C  - C - O - C  H
   Cl - F       H
```

It is a clear, colorless liquid with a strong, sweetish odor. This compound is stable and not decomposed by air, light or alkali: however, for absolute safety 0.01 per cent dibenzylamine has been added to prevent acid formation. It is highly soluble in oil with a distribution coefficient of 390. It has a specific gravity of 1.42. It is nonflammable in all concentrations at room temperature. Although it has a higher boiling point (104.8° C. at 760 mm Hg) above than water, it vaporizes readily because of its low heat of vaporization (49 Calories/Gm).

The vapor pressure at 20° C. is approximately 25 mm Hg. It is interesting to know that one ml. of liquid methoxyflurane, when vaporized, occupies a volume of 209.7 ml. at 23° C.[9] Depending upon the type of vaporizer, a maximum of four per cent methoxyflurane can be administered during clinical anesthesia at normal room temperature (20° C.). If the cost is comparable with other halogenated hydrocarbons, it should prove a very economical agent on the basis of its physical properties alone.

METHOD OF ADMINISTRATION TO MAN

This agent may be used in conventional anesthesia apparatus. In our study vaporization was carried out at room temperature using various vaporizers including the Heidbrink wick ether vaporizer; the vaporizers on the Boyle's machine using both the ether bottle and the Trilene bottle for greater volumes; the Vernitrol (Heidbrink) vaporizer; and the Copper Kettle vaporizer (Forreger). When air was used as a carrier gas a thick-walled foam rubber resuscitator bag was employed with a Heidbrink wick vaporizer placed between the bag and a non-rebreathing valve (Fink).[3] Methoxyflurane may also be administered using the open drop method, but this was not done in the present study.

When the ether vaporizer of the Boyle machine was used, the practice was to gradually adjust the tap to full "open" and to vary the concentration by raising or lowering the plunger.

With the Heidbrink wick ether vaporizer, settings of 9 to 10 were required for induction of anesthesia; maintenance was possible with settings of three to five at flow rates of two liters of O_2 in a semi-closed circle system.

When using the Vernitrol or Copper Kettle vaporizers, relatively high gas flows are required to pass through the liquid in the vaporizer, and diluent gas flows must be reduced accordingly. At flows of 800-1200 ml. O_2 through the kettle one to one and one half liters may be added for dilution. When the kettle permits flows of 2000-2400 ml., two to three liters may be used for dilution. Adequate concentrations to produce surgical anesthesia could not be obtained if the flows from the kettle were diluted beyond this range. In a semi-closed circle system using two liter flows of both O_2 and N_2O with 900-1200 ml. flow through kettle an inadequate level of anesthesia resulted. All five procedures attempted in this manner required Demerol and/or Pentothal supplementation.

The most efficient method of administration was accomplished with the use of a Heidbrink wick vaporizer in the circle and a Venturi Injector[19] which moves 20 liters per minute through the vaporizer. The Venturi Injector is an improved circulator[11, 12] for use in a valveless circle anesthetic circuit. With this system settings of one to two on the Heidbrink wick vaporizer were adequate for surgical anesthesia.

A vaporizer especially designed for methoxyflurane has been marketed recently under the name of Pentec.[21] It was not available to us during this study.

CLINICAL MATERIAL AND RESULTS

A total of 31 patients, which had been scheduled for elective surgical procedures, were studied. Age distribution, type and duration of surgery and complicating diseases are given in tables I-IV.

As premedication the conventional combination of a sedative drug and a vagal blocking agent was used. All premedication was intentionally omitted in five young healthy adult females to observe the pure pharmacologic effects of methoxyflurane.

Five patients were induced with pentothal and maintained with methoxyflurane, N_2O,

---

A graduate of the University of Oklahoma School of Medicine in 1956, B. R. Goetzinger, M.D., limits his practice to Anesthesiology.

Doctor Goetzinger is a member of the American Society of Anesthesiologists and the International Anesthesia Research Society.

Peter J. L. Welt, M.D., graduated from the Free University of Berlin in 1953. He is now Assistant Professor of Anesthesiology at the University of Oklahoma School of Medicine.

Walter H. Massion, M.D., graduated from the University of Heidelberg in 1951. He limits his practice to his specialty, anesthesiology. He is Associate Professor of Anesthesiology at the University of Oklahoma School of Medicine.

Doctor Massion holds memberships in the American Physiological Society, the National Association for Advancement of Science, the New York Academy of Sciences and the American Society of Anesthesiologists.

Table I

Age in Years	No. Patients
1-4	1
5-9	2
10-19	8
20-29	6
30-39	0
40-49	3
50-59	4
60-69	2
70-79	3
80-89	2

Table II

Type of Surgery	No. Patients
Intracranial	1
Head and Neck	7
Abdominal	6
Intrathoracic	1
Extremities	6
Perineal	10

O_2; 23 received only methoxyflurane and oxygen without supplements; and three were done with methoxyflurane and air.

Induction was smooth in every case. Loss of consciousness and response to spoken voice was lost in four to eight minutes but generally at least 10-15 minutes were required before an adequate state of anesthesia was attained to prevent reaction to painful stimuli. The vapor seems to be non-irritating, and rapid increase in concentration was possible without producing cough or laryngospasm. Endotracheal intubation could be accomplished in 10-15 minutes with adequate relaxation of muscles. Fourteen of the 31 patients observed were intubated.

During induction of anesthesia there was no change in respiratory rate or tidal volume; however, during surgical anesthesia decrease in tidal volume and respiratory minute volume was noticed with rate relatively unchanged. In all cases respiration was either controlled or actively assisted. No evaluation of lung or chest wall compliance was made; however, resistance to inflation appeared minimal.

Hypotension has been reported by all investigators with average blood pressure falls of 20 mm mercury. Further falls usually indicate overdose. In our patients hypotension of over 20 mm mercury was seen in five cases. In three of these the patient had an associated chronic debilitating condition with recent weight loss. In one there was acute massive hemorrhage and in one there was a probable overdose of the anesthetic agent. In all cases perfusion of body tissues appeared satisfactory even with moderately severe hypotension. Electroencephalographic tracings in five patients so monitored failed to reveal any convulsive or hypoxic pattern in spite of moderate degrees of hypotension. All patients showed normal cardiac rhythm clinically, and electrocardiographic tracings taken in five cases revealed no abnormalities of rate or rhythm.

During surgical anesthesia with controlled or assisted ventilation muscle relaxation was profound. No muscle relaxant drugs were used in our study, but others have reported compatibility with succinylcholine and d-tubo-curavine.

All previous reports have stressed the prolonged emergence from anesthesia. If the administration is continued until the end of the operative procedure, there will be a 20-30 minute delay in return of responsiveness to spoken voice. With experience and anticipation of surgical requirements the anesthetic can be discontinued 10-15 minutes prior to the end of the procedure and awakening can be expected at the termination of surgery. In one of our patients there was a delayed awakening of two and one half

Table III

Duration of Surgery	No. Patients
Less than 1 hour	7
1-2 hours	11
2-3 hours	4
3-4 hours	4
4-5 hours	1
5-6 hours	3
6-7 hours	1

Table IV

Complicating Diseases	No. Patients
Obesity	3
Coronary Heart Disease	2
Cerebral Arteriosclerosis	1
Arteriosclerosis (generalized)	3
Emphysema	1
Asthma	1
Diabetes	1
Cerebral Palsy	1
Multiple Sclerosis	1

hours. This occurred even after the discontinuance of the drug administration 30 minutes prior to the anticipated end of the operation. Recovery, however, was complete.

Nausea and vomiting occurred in five of 31 patients and was severe in two patients, lasting intermittently for three days.

Prolonged postoperative analgesia as reported by other investigators was not seen in our series. One half of all patients required narcotics during the first post-operative day. No delirium or hypotension was seen in the post-operative period.

In our 31 cases there was one post-operative death, which was apparently not related to the anesthetic. This occurred in a 57-year-old man with coronary heart disease, cerebral arteriosclerosis, pulmonary emphysema, and a recent 60 pound weight loss due to an esophageal lesion who underwent esophagectomy, pyloroplasty, vagotomy, and a repair of hiatus hernia. He did well post-operatively for his first 20 days, when he suffered a cerebral vascular accident, vomited and aspirated. He died 24 hours following this episode.

METHOXYFLURANE-AIR ANESTHESIA

The use of a methoxyflurane air mixture deserves special mention. Methoxyflurane is a potent anesthetic agent with a very low (0.5-3.0 per cent) range of clinical concentration. This potency allows vaporization with air without materially compromising the oxygen supply to tissues. The oxygen-hemoglobin dissociation curve shows that small variations in Po_2 at the right-hand side between 80-100 mm Hg have only minor effects upon the saturation of hemoglobin.

Three case histories of patients done with air-methoxyflurane techniques are presented:

The first patient was a 17-year-old male with an arterio-venous fistula in the left groin secondary to trauma. From an awake and anxious state preoperatively he was asleep in four minutes and respiration was easily controlled manually in nine minutes. The operation consisted of a left femoral exploration and division of a small arterio-venous fistula. The operation lasted two hours and 53 minutes. His pupils remained small and fixed centrally throughout. Skin remained warm and dry. The electrocardiogram and electroencephalogram were normal. Blood pressure was stabilized approximately 20 mm. (systolic) lower than preoperatively. Methoxyflurane administration was discontinued 15 minutes prior to the end of the surgical procedure, and the patient responded to painful stimulus at the end, but response to spoken voice was not present for one and one half hours. He required narcotics four hours post-operatively for pain. No nausea or vomiting was present during the cast or post-operatively.

The second case was that of an obese 28-year-old female with bilateral varicose veins. From an awake and moderately apprehensive state preoperatively she was unconscious in six minutes and tolerated an oral airway and manually controlled respiration in ten minutes. The operation lasted one hour 39 minutes and consisted of bilateral vein stripping. The skin remained warm and dry throughout. The pupils were small and centrally fixed. The blood pressure, however, fell from preoperative levels of 190/130 to 125/90 after 50 minutes of administration. A reduction in concentration of the agent reversed this fall and immediately post-operatively her blood pressure was 190/120. Continuous electrocardiographic and electroencephalographic recordings revealed no abnormalities. Methoxyflurane administration was discontinued 35 minutes prior to the end of the procedure, and she was awake and responded to verbal command at the end. There was no vomiting post-operatively.

The third patient was a 72-year-old female with cancer of the rectum who underwent an abdomino-perineal resection. From an awake condition preoperatively, she was unconscious in eight minutes, and tracheal intubation was accomplished in 20 minutes. The operation lasted three hours 25 minutes. The skin remained dry but became somewhat cool by the end of the procedure. The pupils remained small and centrally fixed throughout. The blood pressure fell due to blood loss from levels of 160/100 to 100/60 but could be controlled with whole blood administration (four units required). Continuous electrocardiographic and electroencephalographic recordings were stable. Methoxy-

flurane administration was discontinued 20 minutes prior to the end of the procedure. The patient would not tolerate an endotrachael tube at the end of the operation and responded to spoken voice 20 minutes post-operatively. There was no nausea or vomiting post-operatively.

DISCUSSION

As a non-explosive agent methoxyflurane can be used under many circumstances where heretofore the choice of anesthetic agent was limited.[17] It is the first asymmetrical methyl ether used in man and has a high degree of potency. There is a sufficient margin of safety in administration due to the fact that its saturated vapor pressure is only 25 mm mercury at 20° C.

Most currently used methods of vaporization of liquid anesthetic agents are satisfactory with this drug. The Heidbrink wick vaporizer appears to be the simplest method to employ. The Venturi injector in a standard "circle" system provides optimum conditions of vaporization.

Some investigators have reported that the slow induction time of the agent is best overcome by using thiopentone. The addition of nitrous oxide for maintenance was also preferred. In our hands induction with methoxyflurane alone was sufficiently rapid to eliminate the need for adding other agents. The inductions attempted with N_2O-O_2 technique with the Vernitrol or Copper Kettle were unsatisfactory due to dilution of the methoxyflurane vapor.

Five patients with clinical evidence of hypovolemia developed undue hypotension with the use of methoxyflurane. This may represent a contraindication to the use of the drug. In one patient normal blood pressure could be maintained using cyclopropane after methoxyflurane was discontinued.

It was noted that considerable time was required to increase the depth of anesthesia and likewise to reverse it. In this light the drug does not seem to be easily adaptable to changing anesthesia requirements.

A delayed awakening time has been reported by some investigators. The theory of prolonged emergence is due to a high fat solubility with subsequent slow release of the agent into the blood stream thereby maintaining a blood and brain concentration adequate for light anesthesia. Other investigators, however, have noted the recovery time to be usually shorter in obese patients, all else being equal. They explain this phenomenon as being due to a rapid fall of the blood level of methoxyflurane if the agent can escape into abundant fatty deposits while being exhaled at the same time.[20] The apparent unpredictability of emergence time may be disadvantageous in hospitals having a busy operating schedule or lacking a recovery room.

Muscle relaxation with methoxyflurane was adequate for all abdominal and chest operations in this series. It was observed that respiration was quite depressed with the profound muscle relaxation and breathing had to be manually controlled or assisted in order to assure adequate ventilation.

A recent publication[21] indicates that the use of epinephrine in conjunction with methoxyflurane will produce a similar incidence of cardiac arrhythmia as seen with chloroform and epinephrine. The combination of these agents should be avoided.

Because of its potency, it is possible to use methoxyflurane with air as the carrier gas. In the event of disaster, atomic warfare, or national emergency, it is quite possible that it would be difficult to obtain compressed gases or other anesthetic supplies. Without compressed gases the present anesthetic machines would be useless. Utilizing a foam rubber resuscitator bag and a non-rebreathing valve with interposed wick vaporizer filled with methoxyflurane, one has a simple, portable, "drawover" type anesthesia apparatus. The advantages are: lack of dependence on compressed gases, easy control of anesthetic concentration, no explosive hazard, and assisted or controlled ventilation when required. A similar apparatus has been described for use with Halothane, and ether.[5, 8, 13]

SUMMARY

Methoxyflurane was evaluated at the University Medical Center to determine its usefulness in clinical practice. It was adminis-

tered by several currently available anesthetic systems and produced adequate anesthesia when vaporized with oxygen or air. Induction was pleasant and maintenance was smooth with assisted or controlled ventilation. Muscle relaxation was profound when used in this manner. Cardiac rate and rhythm were not adversely affected. To date this agent seems to be a useful and relatively safe anesthetic agent. □

The methoxyflurane used in this study was supplied by Abbott Laboratories, under the trade name of Penthrane.

BIBLIOGRAPHY

1. Artusio, Joseph F., Jr., et al.: A Clinical Evaluation of Methoxyflurane in Man, Anesthesiology 21: 512-517, September-October, 1960.
2. Chenoweth, M. B.: Blood and Tissue Distribution of Methoxyflurane, Ether, and Chloroform in the Dog. (The Dow Chemical Company, Midland, Michigan)
3. Fink, B. R.: Non-rebreathing Valve of New Design, Anesthesiology, 15: 471, September, 1954.
4. Hudon, F.: Methoxyflurane. The Canadian Anesthetists' Society Journal, Vol. 8: No. 6, 544-550, November, 1961.
5. Macartney, Hugh H.: Halothane—Air Anesthesia Using the "Pulmotec" Apparatus, Canadian Anesthetist Society Journal, Vol. 8: No. 3, 281-286, May, 1961.
6. Millar, R. A. and Morris, M. E.: A Study of Methoxyflurane Anesthesia, Can. Anes. Soc. J., Vol. 8: No. 3, 210-215, May, 1961.
7. North, William C.: Respiratory, Circulatory and Hepatic Effects of Methoxyflurane in Dogs, Anesthesiology 22: 139, January-February, 1961.
8. Papantony, Mary, Landmesser, Charles M.: Portable Unit for Fluothane—Air Anesthesia ("Puffa") Anesthesiology 21: 768-773, November-December, 1960.
9. Penthrane (Methoxyflurane), (Abbott Laboratories). Brochure made available to investigators.
10. Power, David J.: McGill University Experiences with Methoxyflurane, Canadian Anesthetists" Society Journal, Vol. 8:, No. 5, 488-491, September, 1961.
11. Revell, D. G.: A Circulator to Eliminate Mechanical Dead Space in Circle Absorption Systems. The Canadian Anesthetists' Society Journal, Vol. 6: No. 2, 98-103, April, 1959.
12. Revell, D. G.: An Improved Circulator for Closed Circle Anesthesia, The Canadian Anesthetists' Society Journal, Vol. 6: No. 2, 104-107, April, 1959.
13. Safar, Peter, Gedang, Irma: Inexpensive Systems for Administration of Ether, Anesthesiology 22: 323-324, March-April, 1961.
14. Siebecker, Karl L., et al: The Respiratory Effects of Methoxyflurane (DA-759, Abbott) on Dog and Man, Anesthesiology 22: 143, January-February, 1961.
15. Van Poznak, Alan, and Artusio, Joseph F., Jr.: Anesthetic Properties of a Series of Fluorinated Compounds. I. Fluorinated Hydrocarbons, Toxicology and Applied Pharm. 2: 363-373, July, 1960.
16. Van Poznak, Alan and Joseph F. Artusio, Jr.: Anesthetic Properties of a Series of Fluorinated Compounds. II. Fluorinated Ether, Toxicology and Applied Pharm. 2: 373-378, July, 1960.
17. Van Poznak, Alan, et al.: Methoxyflurane as an Anesthetic for Neurological Surgery, J. Neurosurg. 17: 477-479, 1960.
18. Wasmuth, C. E., Greig, J. H., Homi, J., Moraca, P., Niyazi, H., Bitte, E. M., and Hale, D.: Methoxyflurane—A New Anesthetic Agent: A Clinical Evaluation Based on 206 Cases, Cleveland Clinic Quarterly 27: 174, 1960.
19. Welt, P.: Personal Communication.
20. Wyant, Gordon M. and Chung Ai Chang and Emanuele Rapicavoli: Methoxyflurane (Penthrane): A Laboratory and Clinical Study, Canadian Anesthetists' Society Journal, Vol. 8: No. 5, 477-487, September, 1961.
21. Dobkin, A. B. and J. S. Israel, Can. Anaes. Soc. J., 9: 36, 1962.

800 N.E. 13th, Oklahoma City, Oklahoma

ATTEND

the

AMA 111th ANNUAL MEETING

McCormick Place **June 24-28, 1962**

Chicago, Illinois

Completely assembled—all in one building—will be the greatest cross-section of every medical interest:

★ More than 200 eminent scientists in the Multiple Disciplinary Research Forum

★ Eight general programs, never before scheduled, by the combined specialties

★ Over 700 exhibits staffed by top researchers and expert technologists

★ Surgical innovations and symposia on live color TV and moton picture premieres

★ Special daily features representing each medical discipline—and countless other vital programs to serve you in your practice

Iatrogenic Heart Disease

WILLIAM W. SCHOTTSTAEDT, M.D.*

IT HAS been suggested repeatedly that physicians might themselves be responsible for arousing lasting overconcern in their patients about their cardiac status. Thirty years ago Conner[1] made the following statement: "In a person of the appropriate mental composition, the slightest suggestion that the heart is not intact may be enough to start a whole train of emotional reactions leading up to cardiac symptoms."

The phrase, "in a person of the appropriate mental composition" needs to be emphasized. Subsequent studies have repeatedly demonstrated that "the source of the cardiac neurosis lies in the patient's, not the doctor's, personality."[2] Only rarely, after a careful investigation, does it appear that the anxiety was first evoked by the physician. Patients with neurocirculatory asthenia are reported to have aggravation of symptoms more commonly after the suggestion of heart disease has been made than do other patients.[3] And patients with free anxiety may fix this upon the heart if a suggestion of cardiac abnormality is made.[4] It is in these patients that the physician should exercise most care in his handling of the patient.

Some patients with intense overconcern about their hearts have severe emotional problems which require prolonged psychiatric care. It is quite possible that others with cardiac preoccupation recover without any treatment whatsoever. The majority of patients fall somewhere between these extremes, needing medical help if they are to overcome their apprehensions about heart disease but able to use this help effectively when it is made available. What should be done for these persons?

Reassurance that no heart disease is present may be insufficient no matter how dogmatically it is given. If one recalls that in many of these patients the anxiety antedates the concern about heart disease, the reason for this failure becomes evident. An anxiety state is not relieved by superficial reassurance.

At such times, the physician needs to establish a strong relationship with the patient, indicating a warm interest in him as a person. This does not require long interviews; it can be done in repeated short contacts with the patient as he comes into the office for studies or for treatment. It does require, however, a discussion of other matters than cardiac symptomatology if the basic reasons for the anxiety are to be uncovered. As the patient becomes aware of these and finds ways of coping with underlying problems, his concern about his heart subsides. The physician is dealing with an anxiety state rather than a cardiac disorder and he should treat the patient accordingly. With attention to the anxiety as well as to the heart, the physician will be able to help the majority of these patients find a more satisfying adjustment to life. □

*Professor and Chairman, Department of Preventive Medicine and Public Health, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

REFERENCES

1. Conner, L. A.: The psychic factor in cardiac disorders, J.A.M.A. 94: 447-452, 1930.
2. Chambers, W. N., Grant, J. L., and White, K. L.: The patient and physician in cardiac symptom formation, J.A.M.A. 168: 1617-1622, 1958.
3. Wheeler, E. O., Williamson, C. R., and Cohen, M. E.: Heart scare, heart surveys, and iatrogenic heart disease: Emotional and symtomatological effects of suggesting to one hundred sixty-two adults that they might have heart disease, J.A.M.A. 167: 1096-1102, 1958.
4. Hart, A. D.: Iatrogenics and cardiac neurosis: A critique, J.A.M.A. 156: 1133- 1138, 1954.

EDITOR'S NOTE: If you are not receiving "Modern Concepts of Cardiovascular Disease" and would wish to, notify the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma.

Dean's Message

The raison d'être for a medical school is medical education. If this aim is well served, high standards of patient care in the medical center will inevitably result, with concomitant benefits to the entire state.

The Outpatient Department at the University of Oklahoma Hospitals serves a vital and indispensible function in Oklahoma medicine. Last year over 100,000 patient visits were made in the outpatient clinics at University and Children's Memorial hospitals. Patients came from all counties of the state.

The ideal functioning of the clinics may be defined by the purposes they are intended to serve. The medical student wants to learn the art and science of the physician-patient relationship. A recent student survey showed that 42 per cent of those queried preferred patients whose illness was largely physical, three per cent preferred patients whose illness was chiefly emotional in origin and the remaining 55 per cent had no preference in this regard. The skills and knowledge gleaned by the students, interns and residents from thoughtful study of these patients will have its reflection in a few short years in the quality of medical care in Oklahoma.

The referring physician wants additional diagnostic and therapeutic skills applied to the patient's case. Often he may have available the resources and skills needed to adequately handle the case but is handicapped by the patient's indigency. Referral then serves the best interests of the physician and patient alike and vitally supports medical education in Oklahoma. The patient of course wants the best medical care obtainable. This need is met when the aims of clinical teaching are adequately carried out.

Presently there are more than 50 different clinics whose purposes are primarily clinical teaching and patient care. These include: At University Hospital—allergy, arthritis, cystoscopy, dermatology, diabetes, endocrinology, endoscopy, gynecology, gynecology-cancer, medicine, minor surgery, neurosurgery, obstetrics (new), obstetrics (return), oral surgery, peripheral vascular, post partum and toxemia, proctology, psychiatry, pyelonephritis, radiotherapy, rehabilitation medicine, sarcoid, urology. At Children's Memorial—allergy, amputee, cardiology, cerebral palsy, children's dental, child guidance, Child Study Center, convulsive disorder, ear-nose-throat, eye, fundus (eye), hand, hematology, metabolic, neurology, orthodontic, orthopedic (adult), orthopedic (children), orthopedic (club foot), pediatrics, plastic, rheumatic disease, special newborn, squint (eye), surgery, well baby.

In general, outpatient referrals are needed and most patients referred are being accepted. In a few clinics, the patient load and requests for service exceed the capacity of the clinic, and in these instances other resources must be obtained in fairness to all concerned. The thoughtful and frequent use of the facilities of the Outpatient Department will redound to the benefit of Oklahoma medicine; its continued support by Oklahoma physicians is earnestly solicited.

Mark R Everett

Intravenous Hypertonic Urea As A Diuretic Agent

WILLIAM O. SMITH, M.D.
JOHN KYRIACOPOULOS, M.D.

OSMOTIC AGENTS administered orally have been used for diuretic purposes in medicine for a great many years. Oral urea was first used by Friedrich in 1892 in various types of edematous patients with reportedly good results.[1] A few years later Strauss reported rather extensive experience with this agent in cardiac edema, where he used as much as 100 grams daily with quite beneficial results.[2] Early in the 20th century, Volhard reported excellent results with this agent in the edema of nephrosis.[3] These observers reported no toxic manifestations of the drug, and emphasized that it was a very useful diuretic, even when treatment with other methods had failed to produce or to maintain a diuresis. It was later shown that the use of urea intermittently over a prolonged period, one to three years, resulted in no observable damage to the kidneys, either functionally or structurally. A more recent study by Papp and Smith has confirmed the value of oral urea in patients with edema from heart failure.[4] They found that urea was capable of converting a negative fluid balance to a positive one, even when mercurials had become useless.

Despite this proved effectiveness of oral urea as a diuretic agent, the drug has not been widely used, primarily because of its unpalatability and its propensity to cause nausea and vomiting. In recent years, however, an intravenous preparation has become available, and has been used rather extensively to reduce intracranial pressure, in the treatment of burns and in the prevention of post-operative oliguria.

The present communication reports the results of intravenous hypertonic urea as a therapeutic tool in edematous states.

METHODS AND MATERIALS

A total of 18 urea infusions have been administered to 13 patients with various edematous states. Eight of the patients had congestive heart failure, three had Laennec's cirrhosis, and two exhibited the nephrotic syndrome. All of the patients remained at bed rest and received a constant diet containing from 500 to 1000 mgm. of sodium per day throughout the study. The patients with congestive heart failure were thought to have been adequately digitilized and were maintained on 0.1 mgm. digitoxin daily. Daily intake, output, and weight records were obtained on each patient. The patients were weighed in the morning before breakfast and after emptying the bladder. A control period of three days was obtained on all patients prior to the urea infusion. On the fourth day of the study from 40 to 80 grams of urea* as a 20 to 30 per cent solution in five per cent glucose and water were administered intravenously during a four-hour period. On the day of urea administration, the fluid intake was limited to 1000-1500 ml. Blood and urine samples for osmolality and electrolyte determinations, as well as blood

From the Medical Service of Veterans Administration Hospital and the Department of Medicine of University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

*Kindly supplied by Abbott Laboratories, North Chicago, Illinois.

urea nitrogen determinations, were collected prior to and following the urea infusion. Osmolalities were measured by the freezing point method, using the Fiske Osmometer, and electrolytes were performed on a flame photometer with an internal lithium standard.

RESULTS

A mean weight loss of 2.5 ± 0.6 pounds per infusion was noted in the group as a whole (table 1). A loss of weight was observed following 15 of the 18 infusions. Two of the three failures occurred in a uremic patient with the nephrotic syndrome. A second patient with the nephrotic syndrome, but without uremia, manifested a satisfactory diuresis on two occasions. The third failure occurred in a patient with congestive heart failure who had already diuresed to near dryness. The patients with cirrhosis of the liver manifested the best diuresis, with a mean weight loss of almost five pounds. One patient, a cirrhotic, lost nine pounds of weight from a single infusion. The patients with congestive heart failure showed a mean weight loss of two and five-tenths pounds.

TABLE 1.

Patient No.	Weight Loss (lbs.)	Δ Urine Vol. (ml.)
	CONGESTIVE HEART FAILURE	
1	2.0	+1890
2	3.3	+ 330
3	3.8	+1800
4	0.8	+ 400
	0	+ 820
5	2.2	+1250
6	2.9	—
	1.5	+1500
7	6.5	+2223
	2.5	—
8	2.3	—
Mean ± S.D. =	2.5 ± 0.5	+1277 ± 248
	P < .001	P < .001
	CIRRHOSIS	
9	3.8	—
10	9.0	—
11	2.0	—
	NEPHROTIC SYNDROME	
12	0	— 630
	0	+ 230
13	2.0	+ 800
	0.9	+ 560
	ALL	
	2.5 ± 0.6	+883 ± 250
	P < .001	P < .005

A mean increase of urine volume of 883 ± 250 ml. occurred despite the fact that fluid intake was actually limited on the day of urea infusion. It should be noted that the output records of cirrhotic patients were considered unreliable, and are not included in the mean value reported. It is reasonable to assume, however, that the cirrhotics had an even greater urinary output since they showed the greatest weight loss, as noted above.

The serum osmolality rose following the urea infusion in every instance, save one, the mean rise being 21 ± three milliosmols per liter. Blood urea nitrogen increased only slightly (six to 21 mg. per cent) except in the uremic patient where it increased by 86 mg. per cent. In all instances, including the uremic, the value had returned to pre-infusion levels within 48 hours. No significant change was noted in either serum sodium or serum potassium. As might be expected, urine osmolalities reflected a tendency for the urine to become isosmotic with the plasma, the hallmark of an osmotic diuresis. No untoward effects were noted during or following the urea infusions, except for a mild to moderate thirst on the day of the urea infusion in a few patients, and a mild local reaction at the site of the infusion in one patient.

DISCUSSION

The above data indicate that intravenously administered hypertonic urea is both an effective and safe diuretic agent. It is noteworthy that one of the patients who responded very well to urea was consistently refractory to the usual nonosmotic diuretic agents. Two other patients successfully diuresed with intravenous urea had shown no response to brief therapeutic trials on chlorthiazide and mercuhydrin respectively.

Two of the three instances where intravenous urea failed to produce a significant diuresis were observed in a patient with the nephrotic syndrome, with an elevated blood urea nitrogen initially. Since such a patient already has a "built-in osmotic diuretic mechanism" due to his elevated blood urea

nitrogen, it is not surprising that a slight further elevation of blood urea nitrogen would be of little further help to him. It is, therefore, recommended that this type of diuretic therapy not be used in patients who are already uremic.

It is of interest that the osmotic diuresis was most effective in the patients with cirrhosis of the liver. Although it is certainly not clear why this should be so, the observation might correlate with the known tendency of cirrhotics to have hypo-osmolarity of their body fluids and with the decreased manufacture of nitrogenous products by the damaged liver. Although one might hesitate to give urea to a decompensated cirrhotic patient by the oral route because of the hazard of increased production of ammonia in the intestine, this objection would not be valid in regard to the intravenous administration of the substance.

Recently, mannitol has been reported to be an effective osmotic diuretic agent in edematous patients, either alone or in combination with other diuretics.[5-7] Our experience with intravenous mannitol has been limited to date, but in the few patients studied we have also achieved quite effective diuresis. Since there is little, if any, reabsorption of mannitol in the renal tubule, as compared with a significant reabsorption of urea, one might expect that mannitol would be more effective on an equal dosage basis. On the other hand, urea is theoretically the safer agent in congestive heart failure since it distributes into intracellular water and would, therefore, be less likely to suddenly further expand extracellular fluid volume. However, in the absence of appreciable renal functional impairment, even mannitol induced little change in blood volume in the studies of Barry and Berman.[8] Otherwise, there appears to be little basis to choose between the two substances.

Some increase in urinary sodium loss is to be expected with both of these agents, as it is with any osmotic diuresis, and up to a certain point, this is therapeutically useful in patients who have increased body stores of sodium. Excessive losses of sodium such as sometimes seen with mercurials and other nonosmotic diuretic agents, however, have not been reported with the osmotic diuretics. Neither is there an excessive increase in urinary potassium excretion during an osmotic diuresis, such as is seen in the diuresis induced by chlorthiazide.[5]

Finally, it should be stated that no long term studies utilizing intravenous urea as a diuretic have been carried out. Therefore, no conclusions may be drawn from these studies concerning the effect of repeated infusions of urea, either in terms of toxicity or continued beneficial results. However, there is no reason to believe that refractoriness to an osmotic diuretic will occur. Several of the patients in the present series had two or even three infusions several days apart, and responded as well to the subsequent infusions as they did to the initial one.

SUMMARY

Intravenously administered hypertonic urea is a safe and effective diuretic agent in various edematous states. It may effect a diuresis in patients when other diuretics have failed. This therapy was found to be most effective in Laennec's cirrhosis but was also quite effective in congestive heart failure and the nephrotic syndrome in the absence of uremia. Intravenous urea is not indicated in the presence of uremia.

REFERENCES

1. Friedrich, W.: Mag. orv. Arch. 1: 400, 1892.
2. Strauss, H.: Charite-Ann. 21: 288, 1896.
3. Volhard, F.: Die doppelseitigen haematogenen Nierenerkrankungen, Julius Springer, Berlin, 1918.
4. Papp, C. and Smith, K. S.: Urea, The Forgotten Diuretic. British M. J. 2: 906, 1957.
5. Bernstein, L. M., Brumberg, B. and Arkin, M.: Osmotic Diuretic Treatment of Refractory Edema. Circulation 17: 1013, 1958.
6. Shaldon, S., McLaren, J. R. and Sherlock, S.: Resistant Ascites Treated by Combined Diuretic Therapy (Spironolactone, Mannitol and Chlorothiazide). Lancet 1: 609, 1960.
7. Grossman, A., and Bernstein, L. M.: The Use of the Osmotic Diuretic "Mannitol" in the Management of "Refractory" Nephrotic Syndrome. (abstract). Am. J. Dis. Child. 102: 616, 1961.
8. Barry, K. G., and Berman, A. R.: Mannitol Infusion. III. The Acute Effect of the Intravenous Infusion of Mannitol on Blood and Plasma Volumes. New England J. Med. 264: 1085, 1961.

921 N.E. 13th, Oklahoma City, Oklahoma

The Computer As A Diagnostic Aid in Medicine*

EDWARD N. BRANDT, Jr., M.D., M.S.
JAMES A. HAGANS, M.D., Ph.D.
WILLIAM W. SCHOTTSTAEDT, M.D.

ONE OF THE important initial functions of a physician is diagnosis, since only after an accurate diagnosis has been made can rational therapy be instituted. Because the diagnostic process is a logical decision-making one, many investigators[1, 2, 3, 4] have been interested in the application of computer techniques as an aid to physicians. However, before computers can be programmed to play an important role in this aspect of medicine, models which realistically represent those processes actually employed by physicians in making a diagnostic decision must be found.[5] These models will at least at first be idealizations of the thinking processes which are believed to be performed by physicians at both a subconscious and conscious level. These models must also be practical from the viewpoint of information and computer operations required, and effective as diagnostic aids.

The purpose of this paper is to discuss those diagnostic models now being investigated with examples of their application. As a preliminary, a general discussion of computers and their functions is presented to aid in understanding their possible role in medical diagnosis.

Computers are electronic and electromagnetic devices designed to perform certain logical stepwise tasks leading to a solution of a problem presented to it if one exists. R. S. Ledley[2] has said that if the steps in the solution of a problem can be broken down into sequences of unambiguous instructions that could be performed by a patient secretary with no knowledge of the subject matter of the problem then it is suitable for a computer.

A computer is composed of five interconnected parts as shown in figure 1. The input unit is that component through which the instructions (called the program) and the data of a problem are given to the computer. Input units may receive this information by means of wired circuits, punched cards, punched paper tape, or magnetic tape. The instructions and the data as well as the intermediate calculations and the final results are stored in the memory unit. The control unit functions to interpret the instructions to the computer, while the arithmetic unit performs the operations leading to the solution of the problem. Finally, the output unit is that component through which the results are given to the operator, using similar media as the input unit.

There are two general types of computers, analog and digital, which differ primarily in the type of data upon which they perform their operations. The analog type operates with data which are given to the computer in the form of continuous physical stimuli such as pressure, voltage, etc. Analog com-

*The Biostatistical Unit and Medical Research Computer Center of the Department of Preventive Medicine and Public Health, and the Department of Internal Medicine, The University of Oklahoma Medical Center, Oklahoma City, Oklahoma.
Supported in part by N.I.H. Grant H-6286 4116901 (Neurocardiology Research Center).

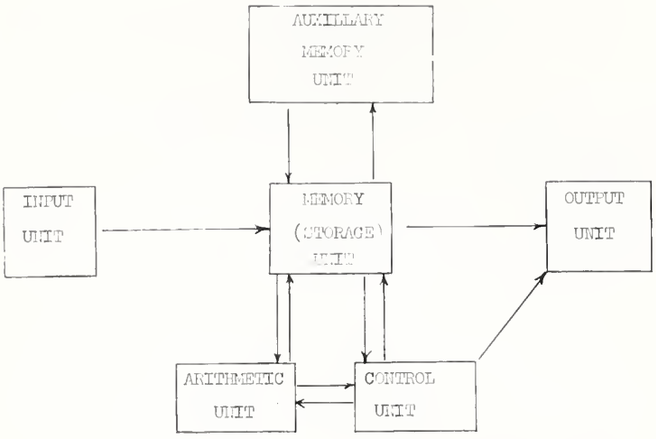


FIGURE I: COMPONENTS OF A COMPUTER

puters are now being used in the analysis of electroencephalograms, electrocardiograms, thorax circumference during the respiratory cycle, etc. This type of computing equipment is programmed by means of wired circuits, and these circuits must be changed to fit each different type of problem. On the other hand, digital computing devices operate upon discrete numerical data. If desired, continuous data may be transformed into numerical form for analysis by the digital computer. Examples of pure numerical data would include results of laboratory procedures, age, weight, drug dosage, the results of interval sampling of continuous data, etc.

Analog equipment has been used for some time in both medical diagnosis and research.[6, 7] These applications have centered about the recording and analysis of electroencephalograms, electromyograms, electrocardiograms, ballistocardiograms, and phonocardiograms. Some of these analyses have aided in the understanding of which components of these physiologic measurements contribute the most to differentiating among disease entities. Many more examples of this use of analog equipment are now appearing in the medical literature, as well as examples of the simulation of human physiologic system by analog and analog plus digital equipment.[6, 7]

Components of analog computers perform various operations such as summing, integration, function generating, function multiplying, resolving, polar compositing, comparing, curve fitting, etc. These are often used in combinations for the solution of a particular problem. Outputs of these units are commonly by way of a voltmeter, a multichannel recorder, an oscilloscope, an x-y plotter or through an analog-to-digital converter.

Only in recent years have digital computers been applied to the problem of medical diagnosis.[8] In the analysis of diagnostic problems, these computers have three main advantages which are: (1) Speed in the evaluation of large amounts of data or the data from large numbers of patients; (2) large memory or storage capacity; and (3) consistency in the methods of analysis used.

As was pointed out earlier, it is necessary to formulate mathematical models resembling actual diagnostic processes. Three such models have been formulated and investigated, and these will now be discussed.

The first of the models is a formalization of the diagnostic process by means of symbolic logic, and is due to Ledley and Lusted.[9, 10] In this discussion, the word "Symptom" shall be used to denote that information uncovered by the physician from the history, physical examination, and laboratory work. The word "Disease" shall refer to a diagnostic category. Three types of information are necessary to develop this model. These are a list of possible symptoms, a list of possible diseases, and the accumulated medical knowledge relating them.

It is necessary first to find all conceivable combinations of the possible symptoms and diseases to form what Ledley and Lusted have called a "symptom-disease complex." For example if we had only three symptoms and two diseases to consider, there would be 2^5 or 32 conceivable "symptom-disease complexes." In general, if there were N symptoms and P diseases to consider, there would be 2^{N+P} complexes to evaluate. Our simple example of 32 conceivable combinations is depicted in figure II. In this figure a + indicates the presence of the symptom or disease and a — its absence. For example, in Column 1, all three symptoms and both diseases are present. Complex 32 represents the trivial case of no symptoms or diseases. After tabulation of all of the conceivable complexes, it is necessary to decide which ones are compatible with the accumulated

medical knowledge. In our example, suppose that the literature revealed the following information: (1) If one of the symptoms is present, at least one of the diseases must be present. This fact would eliminate complexes number 7, 17, 18, 24, 27, 28, and 29. (2) If one of the diseases is present, at least one of the symptoms must be present. This eliminates complexes number 23, 30, and 31. (3) If disease 2 is present, then either symptom 1 or symptom 2 must be present. This eliminates complexes number 10, 22, 23, and 31. Therefore, by use of these three facts, we have eliminated 12 of the 32 conceivable complexes, and discarding the trivial case, complex 32, there are 19 medically feasible combinations of these three symptoms and two diseases. The discarded complexes are marked with a single asterisk.

There are two main limitations to this model. In the first place, it has been estimated that a single medical specialty is concerned with at least 400 symptoms and 300 diseases.[5] This would lead to 2^{700} (a number about 200 digits long) conceivable symptom disease combinations each of which would have to be evaluated as to its feasibility. This would of course consume much time even with the use of computing equipment now available, and at present is not practical. The second limitation resides in the fact that rarely does medicine deal with certainties. Instead, symptoms and diseases are related by probabilities. This is true for several reasons including differing abilities of patients to relate their complaints, and differing abilities of physicians to elicit and interpret these complaints, as well as differences in manifestations of disease processes. Furthermore, many findings are borderline, and most are subject to some subjective concept of severity.

These two limitations make it necessary to add to or modify our model as it now stands. The first limitation, that of magnitude of the problem, is difficult to overcome except by working with very specialized areas of medicine. However, the second one can be at least partially overcome by the use of conditional probabilities, and this leads into a discussion of the second general approach to the problem.

In order to explain this model, it is first necessary to demonstrate some basic formulae of probability.

$$P\ (Y_1) = \frac{Ny_1}{N_T} \qquad (1)$$

Formula (1) is the fundamental definition of probability, that is, the probability of disease Y_1 equals the ratio of the number of patients having disease Y_1 to the total number of people studied. This probability will vary with the geographical location, environment, season, and other factors. Formula (2) represents the definition of a conditional probability. That is, the probability of a symptom X_1 occurring in patients with disease Y_1 equals the ratio of probability of the simultaneous occurrence of symptom X_1 and disease Y_1 to the probability of having disease Y_1, i.e.

$$P(X_1 \mid Y_1) = \frac{P(X_1, Y_1)}{P(Y_1)} \qquad (2)$$

This is the form in which data is easiest to obtain, but for maximum usefulness, we need the conditional probability of a particular disease given a particular set of symptoms, $X_1, X_2, \ldots, X_k$. This is accomplished by use of Bayes' Theorem,

$$P(Y_1 \ X_1, X_2, \ldots, X_k) = \frac{P(Y_1) \cdot P(X_1 \mid Y_1) \cdot P(X_2 \mid Y_1) \ldots P(X_k \mid Y_1)}{\sum_j P(Y_j) \cdot P(X_1 \mid Y_j) P(X_2 \mid Y_j) \ldots P(X_k \mid Y_j)} \qquad (3)$$

where Σ directs one to sum over all possible values of j. This is in essence a formula for combining conditional probabilities in order to obtain the probability of a disease given a set of symptoms. Using these formulae,

FIGURE II: SYMPTOM-DISEASE COMPLEXES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
S(1)	+	+	+	+	+	—	+	+	+	—	+	+	+	—	—	—	+	+	+	+	—	—	—	—	—	—	+	—	—	—	—	—
S(2)	+	+	+	+	—	+	+	+	—	—	+	—	—	+	+	+	+	—	—	—	+	—	—	+	—	+	—	+	—	—	—	—
S(3)	+	+	+	—	+	+	+	—	—	+	—	+	+	+	+	—	—	+	—	—	—	+	—	+	+	—	—	—	+	—	—	—
D(1)	+	+	—	+	+	+	—	—	+	+	+	+	—	+	—	+	—	—	+	—	—	—	+	—	+	+	—	—	—	+	—	—
D(2)	+	—	+	+	+	+	—	+	+	+	—	—	+	—	+	+	—	—	—	+	+	+	+	—	—	—	—	—	—	—	+	—
							*			*							*	*				*	*	*			*	*	*	*	*	*

we can compute the conditional probability of any disease given any symptom and by use of Bayes' theorem, we can compute the probability of the disease given a set of symptoms. As you can see the computer functions in this system primarily as a frequency counting and storage device, as well as being useful in the computation of Bayes' formula.

The primary problems encountered with this model are two fold. First, there is the difficulty of obtaining good probability estimates of the rarer diseases. This is difficult because of the scarcity of available data, and in general the estimates obtained are likely to be too high. Secondly, it is difficult to evaluate patients having more than one illness especially if these are similar.

There have been two large studies utilizing this model. A general application at Cornell Medical Center[11, 12] and a specialized one at The University of Utah[13] in congenital heart diseases. In the Cornell study, the 60 most common diseases in men and women were studied by use of the Cornell Medical Index which was completed by the patients. Almost 6000 patients' records were evaluated in order to obtain the conditional probabilities. Application of these probabilities to a sample of nearly 3000 patients, the over all diagnostic accuracy was about the same as that of the attending physicians except in two general areas, namely psychoneurotic illnesses, and certain diseases associated with a minimum number of symptoms such as malignancies of the skin. The Utah study was concerned only with congenital heart defects. Again, their predictive accuracy was about the same as that of the clinicians, but in general, the differential diagnosis given by the computer was more complete than that by the physicians.

The third general model is known as discriminant analysis. This model is said to more closely approximate the clinical approach to diagnosis than any other known models.[5] By this method, each patient is assigned to one discrete diagnostic category by means of a score calculated as a weighted sum of the clinical features of his illness. Formula (4) gives the general equation for this model.

$$Z = \Sigma B_i X_i \qquad (4)$$

The Z's represent the diagnostic categories while the X's represent the symptoms. The B's are the weights attached to each symptom. These weights are calculated from a sample of patients with known diagnoses such that there is maximum discrimination among the diagnostic categories. Consequently, those features highly associated with the presence or absence of a disease receive the largest weights. After the weights have been calculated, each variable can be tested for the statistical significance of its contribution to the over all score. Furthermore, the statistical significance of the ability of the diagnostic equation to properly classify each patient can be determined.

Now using the diagnostic equation depicted above, the presence, absence, or the particular value of each of the patient's findings are substituted in this equation, and a Z score is obtained for that patient.

In order to illustrate this model, an example from the University of Oklahoma Medical Center[14] has been included. This study was concerned with predicting the outcome of patients experiencing an acute myocardial infarction. One of the basic problems of adopting this model is the selection of which variables to use. This is essentially an application of medical judgment, but several "passes" through the computer are often necessary before the function is effective in obtaining good separation of the diagnostic categories. In our example, 22 variables were finally selected, and these were measured in 445 patients. Three hundred eighteen patients were predicted to live by the equation and 28 actually died for an accuracy of prediction of 91.2 per cent. One hundred twenty-seven patients were predicted to die and nine actually lived for an accuracy of prediction of slightly over 92 per cent. Thirty-seven patients were misclassified out of a total of 445 for an overall predictive rate of 91.7 per cent. This would seem to imply that this equation is effective in discriminating between these two mortality categories.

This general approach has also been used by Zieve and Hill[15] in a study of the diag-

nosis of hepatic disease using certain liver function studies, by Greenberg and Wells[16] in a study of perinatal mortality, and by others.

The computer in this model is primarily concerned with calculation of the discriminant weights, and with calculation of the statistical significance of the contribution of each variable.

In order to make our models completely analogous to the actual clinical process of making a diagnosis, they must be converted into a sequential process whereby patients are classified into smaller and smaller diagnostic categories at each of several diagnostic steps. No large study has been reported to date which investigates this interesting and challenging aspect of the problem.

In summary, modern computer techniques may well prove to be a valuable direct adjunct to the physician in reaching correct diagnoses, but much work remains to be done. As more and more accurately maintained clinical records become available, and as research facilities incorporating computers and trained technical personnel develop, the assessment of the factors essential for the clinical diagnosis of various disease states can be objectively performed.

BIBLIOGRAPHY

1. Brodman, K.: "Diagnostic Decisions by Machine," I. R. E. Trans. Medical Electronics, ME-7: 216-219, 1960.
2. Ledley, R. S.: "Digital Electronic Computers in Biomedical Science," Science 130: 1225-1234, 1959.
3. Rikli, A. E. and C. A. Caceres: "The Use of Computers By Physicians As A Diagnostic Aid," New York Acad. Sci. Ser. II, 23: 237-239, 1961.
4. Vandenberg, S. G.: "Medical Diagnosis By Computer: Recent Attempts and Outlook For The Future," Behavioral Science 5: 170-174, 1960.
5. Overall, J. E. and C. M. Williams "Models for Medical Diagnosis," Behavioral Science 6: 134-141, 1961.
6. Clynes, M.: "Computer Analysis of Reflex Control and Organization: Respiratory Sinus Arrythmia," Science 131: 300-302, 1960.
7. Clynes, M.: "Unidirectional Rate Sensitivity: A Biocybernetic Law of Reflex and Humoral Systems as Physiologic Channels of Control and Communication," Ann. N. Y. Acad. Sci. 92: 946-969, 1961.
8. Weinrauch, H., and A. W. Hetherington: "Computers in Medicine and Biology," J.A.M.A. 169: 120-125, 1959.
9. Ledley, R. S. and L. B. Lusted, "The Use of Electronic Computers to Aid in Medical Diagnosis," Proc. Inst. Radio Engineers, 47: 1970-1977, 1959.
10. Ledley, R. S. and L. B. Lusted: "Reasoning Foundations of Medical Diagnosis," Science 130: 9-21, 1959.
11. Brodman, K., A. J. Van Woerkom, A. J. Erdmann, Jr., and L. S. Goldstein: "Interpretation of Symptoms With A Data Processing Machine," A.M.A. Arch. Int. Med. 103: 776-782, 1959.
12. Van Woerkom, A. J. and K. Brodman: "Statistics for A Diagnostic Model," Biometrics 17: 299-318, 1961.
13. Warner, H. R., A. F. Toronto, L. G. Veazey, and R. Stephenson: "A Mathematical Approach to Medical Diagnosis," J.A.M.A. 177: 177-183, 1961.
14. Hughes, W. L., J. M. Kalbfleisch, E. N. Brandt, Jr., and J. P. Costiloe: "The Analysis of Mortality Factors in Acute Myocardial Infarction," Clin. Res. 10: 18, 1962.
15. Zieve, L. and E. Hill: "An Evaluation of Factors Influencing The Discriminative Effectiveness of A Group of Liver Function Tests," Gastro-Enterology 28: 759-765, 1955.
16. Wells, H. B., B. G. Greenberg, and J. F. Donnelly: "North Carolina Fetal and Neonatal Death Study," Am. J. Pub. Health 48: 1583-1595, 1958.
17. Holtzman, W. H.: "Can The Computer Supplant The Clinician?" J. Clin. Psych. 16: 119-122, 1960.

800 N.E. 13th, Oklahoma City, Oklahoma

DEPARTMENT OF SURGERY HOSTS SENIOR SURGICAL RESIDENTS

The Department of Surgery was honored to be host May 3-5 to the Fourth Annual Conference of University Surgical Residents, a group of senior surgical residents completing their formal training at university medical centers throughout the United States and Canada.

Some 135 men from 72 university surgical training programs participated. There was a total of 58 scientific presentations of surgical interest selected from 118 submitted abstracts.

Lester R. Dragstedt, M.D., professor emeritus of surgery at the University of Chicago and professor of experimental surgery at the University of Florida, addressed the conference on "Christian Fenger and the Chicago School of Surgery." Doctor Dragstedt later delivered a lecture entitled "The Pathogenesis of Peptic Ulceration" to the residents and the medical student body.

The Biostatistical Unit of the Department of Preventive Medicine and Public Health

JAMES A. HAGANS, M.D., Ph.D.
WILLIAM W. SCHOTTSTAEDT, M.D.

THE BIOSTATISTICAL UNIT of the Department of Preventive Medicine and Public Health was formed in 1957. Supported by the National Institutes of Health, a biostatistical program was initiated under the direction of Doctor Carl R. Doering and Doctor Kirk T. Mosley. Its dual purpose was to meet the needs of the Medical Center for consultation in the problems of research design and statistical analysis and to give training to additional personnel in the theory and methods of medical statistics. Since its inception the resources of the Biostatistical Unit have steadily developed to meet the needs of the basic sciences and of clinical research. An active training program for persons interested in specializing in the field of biostatistics has been established. The Biostatistical Unit now has nine graduate students working towards Master's and Doctoral Degrees. In addition, training programs for medical, nursing, and graduate students have had increasing need for courses in statistical methodology and theory. These courses have been developed by staff members and consultants working together in the Biostatistical Unit. This has been made possible through the active participation and support of the Statistical Laboratory of the Department of Mathematics and Statistics at Oklahoma State University, the Computer Science Laboratory and Mathematics Department at Oklahoma University, and the Statistics Section of the State Health Department. From these sources the Medical Center has received instruction and consultation from Doctor Carl Marshall, Doctor Robert Morrison, Doctor William Viavant, Doctor John Brixey and Mrs. Margaret Shackelford.

The development of statistical services in the Medical Center has been sufficiently rapid to justify the establishment of a Computer Center devoted to the needs of medical research. A grant recently received has made it possible to establish such a Medical Research Computer Center with a full complement of IBM peripheral equipment, two versatile medium-sized computers, an IBM 1620 and 1401 card and magnetic tape series. Plans have been formulated to add analog computers and analog-to-digital conversion devices. In addition to these local full and part-time resources in personnel and equipment, the Computer Science Laboratory on the Norman Campus with its IBM 1620 and IBM 1410—Ramac Disc File Systems will be available in June of this year. The new OSAGE computer is now in the final stages of construction at the Merrick Computation Center on the North Campus in Norman and is also available for use.

Three new consultants in the Biophysical Sciences are being added to the staff. Professor James Burwell, Department of Physics; Professor Kenneth Watson, Department of Electrical Engineering; and Professor John Powers, Department of Chemical Engineering, all from the Norman Campus. Three graduate assistants are employed as student programmers in the Computer Center. Two of these are master's candidates from the Department of Physics at Norman; the third is a master's candidate from the Department of Mathematics at Norman.

Alex de Tocqueville in "Democracy in America" states, "The mind, it appears to me, may divide science into three parts. The first comprises the most theoretical principles and those more abstract notions whose application is either unknown or very remote. The second is composed of those general truths that still belong to pure theory, but lead, nevertheless, by a straight and short road to practical results. Methods of application and means of execution make up the third."[1] Doctor Bancroft of the Statistical Laboratory, Iowa State University, adds "It would seem desirable to include some material from each of these three corresponding analogous divisions of statistics, at least in the graduate common core course programs. Specialization by students in any one of the three areas might then be attained by taking additional work classified as non-common core course program requirements. It may well be that many colleges and universities, because of type, size, and/or interests may not be able to provide advanced specialization opportunities in all three areas."[2]

The Director and others affiliated with the Biostatistical Unit believe that a medical statistician should have a well balanced background in the biologic and mathematical sciences. They also feel that medical research will best be served if biostatisticians have a balanced background in the theoretical and applied aspects of the field. With the resources of the Biostatistical Unit and Medical Research Computer Center and of the Departments of Mathematics at Oklahoma University and Oklahoma State University and of the Computer Science Laboratory at Oklahoma University, it should be possible for the student in biostatistics to have a well balanced program of biologic and mathematical materials or a program including emphasis both on theoretical and applied aspects of the field. It is also possible for a student in this unit to follow any one of the avenues of specialization suggested by the quotations from de Tocquerville and Bancroft. Thus, a maximum of freedom for personal development is afforded by the personnel of the Biostatistical Unit and it consultant staff. The ideal final result of a continuum of persons from the "pure" theorist or physical scientist to the "pure" biologist or medical scientist will thus become a possibility and the mutual overlapping research interests of these artifically departmentalized disciplines will be served maximally.

The growth and development of the Biostatistical Unit are by no means complete. It can be said, however, that during the past five years it has served a vital need for the Medical Center. Through it, consultations and technical services of statistical and computer personnel are being made available to all engaged in research at or in affiliation with the Oklahoma University Medical Center. □

REFERENCES

1. de Touqueville, Alex: Democracy in America, Volume II, Chapter 10, Alfred A. Knopf, New York, 1945.
2. Bancroft, T. A.: The Organization of Statistical Instruction in Colleges and Universities, "The American Statistician," Volume 14, No. 5, December, 1960.

ABSTRACTS

FACTORS IN THE TREATMENT OF EPILEPTIFORM DISORDERS

Many aspects of the causes and mechanisms of convulsive disorders remain obscure, and our information concerning the exact neuropharmacologic action of the various drugs used in these disorders is likewise fragmentary. Despite the embryonic state of our knowledge in this area, a considerable amount of information can be pieced together from the data gathered by clinicians, pharmacologists, and neurophysiologists.

It is suggested that these drugs may act in several ways: first, on the neurons of the epileptogenic site to prevent their discharge, second by inhibiting the surrounding neurons and thus preventing the spread of the discharge, and third, on non-nervous tissue such as blood vessels supplying the epileptogenic site—an indirect means.

Presumed sites and mechanisms of action for the various types of anticonvulsant drugs are discussed together with some brief comments pertinent to their use and toxic manifestations. The use of agents not ordinarily thought of in connection with seizure therapy such as amphetamine, adrenal cortical steroids, anticholinergics, and procaine are also mentioned together with ancillary facets of treatment.**

(REVIEWER'S NOTE: This article contains basic information organized from many sources which will be helpful to any physician who seeks a better understanding of the rationale for the drugs he employs in convulsive disease. While it is in no way a "how-to-do-it" collection of clinical recipes, it will, hopefully, assist him in selecting the most effective therapy for his individual patient.)

**Clinical Pharmacology of Anticonvulsant Compounds. C. G. Gunn, J. Gogerty, and S. Wolf. Clinical Pharmacology and Therapeutics 2: 733-749 (Nov.-Dec.) 1961.

DRUG TREATMENT OF SCHIZOPHRENIA

The administration of phenobarbital, chlorpromazine, or a placebo to 60 women suffering from chronic schizophrenia showed that chlopromazine and phenobarbital are measurably different when their psychopharmacologic properties are compared.

Ward attendants, psychologists, and a psychiatrist all rated the behaviour of the patients just before the drugs were administered, and at intervals during 16 weeks of drug therapy. A group of psychologic tests were also employed to evaluate various aspects of mentation, motor co-ordination, and social behaviour. No one concerned with the care, treatment, or evaluation of the patients was aware of which drug or placebo was being given to any patient.

At the conclusion of the study, the psychiatrist considered only eight of the patients to be clearly improved. When the drugs which these patients had received were identified, it was found that seven had received chlorpromazine and the eighth, phenobarbital.

The psychologic tests indicated increased psychomotor and intellectual accomplishments for the chlorpromazine group. No significant difference could be found between those patients treated with phenobarbital and those receiving the placebo.*

(REVIEWER'S NOTE: At a time in which each morning's mail brings a new cloud of iridescent promise for the latest contentment capsule, it is encouraging to see an attempt made to isolate and critically evaluate the particular characteristics of some of these drugs. The care with which these investigators designed and conducted their study has resulted in valid and specific information, and makes this report worth the attention of physicians who have occasion to prescribe these drugs.)

*Chlorpromazine in Chronic Schizophrenic Women: I. Experimental Design and Effects at Maximum Point of Treatment. M. L. Clark, T. S. Ray, A. Paredes, J. P. Costiloe, J. S. Chappell, J. A. Hagans, and S. Wolf. Psychopharmacolgia 2: 107-136, 1961.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Adenine Myonic Acid Nucleotide. D. P. de Caputto, W. H. Mostey, L. Poyer and R. Caputto. Journal of Biological Chemistry **236:** 2727, 1961.

K Transport and Mechanical Responses of Isolated Longitudinal Smooth Muscle From Guinea Pig Ileum. G. B. Weiss, R. E. Coalson, and L. Hurwitz. American Journal of Physiology **200:** 789, 1961.

Hematology of the Horned Lizard, Especially Blood Basophils and Tissue Mast Cells. J. W. Kelly, A.-W. Boseila, L. F. Cavazos, and W. M. Feagans. Acta Haematologica **26:** 378, 1961.

Nutritional Studies **in vitro** with Rous Sarcoma Virus. B. A. Brown and L. V. Scott. Proceedings of the Oklahoma Academy of Science **41:** 88, 1961.

Gastric Secretion and Antrum pH. A Correlation Using In Situ Measurements. D. W. Foerster and M. K. DuVal, Jr. Surgical Forum **12:** 270, 1961.

Vancomycin and Ristocetin: Applied Pharmacology. H. D. Riley, Jr. Pediatric Clinics of North America **8:** 1073, 1961.

Reprints of the above publications are usually available on request from the senior author.

in 1948
unique therapeutic achievement

in 1962
universal therapeutic acceptance

Dramamine® in vertigo

brand of dimenhydrinate

world standard for control of vertigo, nausea and emesis associated with

■ Motion Sickness ■ Postoperative States ■ Labyrinthitis ■ Hypertension ■ Radiation Sickness ■ Ménière's Syndrome ■ Postfenestration Syndrome ■ Antibiotic Therapy ■ Migraine Headache ■ Pregnancy ■ Narcotization ■ Electroshock Therapy

Tablets/Liquid/Ampuls (for I. M. or I. V. use)/Supposicones®

SEARLE

Research in the Service of Medicine

SOCIAL SECURITY SHOWDOWN

"If American medicine will not submit gracefully, let's drag them into the new frontier of the sixties with a national care program."

The spokesman for organized labor was speaking of adding health care benefits to Social Security—the first step toward complete nationalization of medicine—and his words grow more menacing each day, as pressure continues to mount for Congressional approval of H.R. 4222, the so-called King-Anderson Bill.

All stops are being pulled to make the King-Anderson Bill law before Congress adjourns this summer. Physicians and others who are anxious to preserve the world's finest health care system must now take pause in whatever else they might be doing and launch an intensive and aggressive communications campaign to their U.S. Representatives and Senators. The forerunner of complete socialized medicine lies on the threshold of reality.

Deceptively, the bill is now resting quietly in the House Ways and Means Committee (Representative Wilbur Mills, Chairman), where it has been locked up since early last year. However, the conservative attitude of the majority of committee members is being bombarded from every side, and it now looks like H.R. 4222, or a modified version of it, may reach the floor of the House for a vote by June.

The Big Show

Toward this end, the National Council of Senior Citizens for Health Care Through Social Security will stage a mammouth rally in Madison Square Garden on May 20th. Simultaneous rallies, or "listening parties," are organized in twenty-eight cities to view the televised program, which will feature President Kennedy, H.R. 4222 advocate.

It is expected that 20,000 partisan elder citizens will be brought to Madison Square Garden by the National Council.

The well-financed Council is headed by former Representative Aime J. Forand, author of H.R. 4222's predecessor, the "Forand Bill." Obvious purpose of the May 20th rally: To create a political pressure block, based upon emotional appeals, and force the hand of Congress on H.R. 4222.

More than 100,000 persons will reportedly view the closed-circuit telecast. Later in the day, all three national television networks will carry taped versions of Kennedy's message.

And that's not all. The adversaries of freedom in health care are also organizing other meetings, sending speakers into most sections of the country, gathering letters and signed petitions. Kennedy reportedly hopes that he will be able to return from New York armed with "the support of the masses of people who want this program."

If the Administration's heavily-financed campaign is successful, the House Ways and Means Committee will find it hard to hold H.R. 4222 any longer.

Only a great and equal effort by physicians and their many friends can offset the "gigantic push" which is being marshalled against America's health care system.

AMA Plans

The American Medical Association applied for equal television time with all three national networks, and was refused. Determined not to let the president's message go unanswered, however, the AMA has purchased time from NBC on May 21st from 8:00 p.m. until 8:30 p.m. (Eastern Daylight Time).

In addition, the AMA has appealed to all state medical societies to step up their congressional contact programs. The showdown on social security is here!

What You Must Do

Although there are thousands of Oklahomans who share the same philosophy as organized medicine toward H.R. 4222, physicians and their wives must take the leadership in developing a communications campaign. It is imperative that all Oklahoma Congressmen and U.S. Senators receive a large volume of mail within the next few weeks.

The plan is simple. Each physician's family need only produce ten letters a week to their Congressman and Senators. This can be accomplished by less than an hour on the telephone each week. If all members of Oklahoma's medical profession will assume this degree of leadership, nearly 80,000 letters will reach the desks of our elected representatives in one month's time.

Representatives should be written c/o House Office Building, Washington 25, D.C. Senators' mail is delivered to the Senate Office Building, Washington 25, D.C. Don't forget to send carbon copies of your letters to Representative Wilbur Mills, who is opposed to H.R. 4222, but now in great need of support.

Tell your legislators why you oppose the bill, such as:

- It is unnecessary — the health needs of Oklahoma's aged are being met through other resources.
- It is unfair—to the elderly who want and are able to maintain their independence and self-reliance; to the elderly who need help but do not qualify; and, to the wage earner who will be forced to foot the bill for millions who are financially independent.
- It is not insurance—H.R. 4222 is nothing but another payroll tax, and the social security program itself remains solvent only through the government's power to continually increase taxes.
- It is the beginning of the end of freedom in health care—the history of social security is one of continuous expansion. H.R. 4222 is the forerunner of complete socialized medi-

(Continued on Page 225)

NATION'S TOP SCIENTISTS TO TAKE PART IN AMA RESEARCH FORUM

More than 200 of the nation's top scientists, representing a cross-section of nearly every medical specialty, will present new and original papers at 12 different sessions at the American Medical Association's 111th annual convention in Chicago, June 24-28.

The papers, which will be offered on Tuesday, Wednesday and Thursday, June 26-27-28, at McCormick Place, are part of a new Research Forum, sponsored by the AMA Council on Scientific Assembly. The Forum was held for the first time at the AMA New York session last June.

After reviewing hundreds of scientific manuscripts, a committee headed by Doctor Edwin H. Ellison, of Marquette University School of Medicine, Milwaukee, has completed selection of participants for the Forum program. Selections were based primarily on quality and timeliness of the author's original investigation.

The Research Forum idea was conceived because AMA Council members felt that it would attract and bring together a variety of top research workers from many specialty areas who have a mutual interest in common medical problems.

This year a three-man panel of experts is being chosen for each of the 12 sessions to discuss the presentations.

Subjects to be covered the first day —Tuesday—will be cancerous growths and peptic ulcer and other problems related to the stomach. The second day, Wednesday, will be devoted to heart disease and transplantation of tissue and organs as well as rheumatic and muscle diseases. On Thursday, the third day, the participants will discuss liver diseases and anesthesia as well as diseases causing abnormally low body temperature.

In outlining the Research Forum program, Doctor Ellison, who is professor of surgery at Marquette, listed five principal objectives:

1. To promote an exchange and coordination of information including newer methods, techniques and the results of research in progress from all sources bearing directly or indirectly on the conquest of disease.

2. To facilitate the flow of up-to-date information from investigators to those engaged in the care of patients and to orient the investigators on the problems facing today's clinician.

3. To provide additional opportunities for young investigators to present their work.

4. To identify and promote new areas of research.

5. To find and motivate intelligent young men and women to seek a career in one of the medical sciences, including research.

Doctor George R. Meneely, Chicago, secretary of the AMA Department of Scientific Assembly, said that "the Research Forum is a monumental step in giving physicians the best information possible on original research."

Continuing, Doctor Meneely said: "By attending Forum sessions, American physicians will be given the opportunity of taking front row seats from which to view the vast panorama of medical progress. What they hear will have great impact for the good of their patients and, more importantly, the discussions will stimulate their investigative minds and bend their thinking to many problems. What they hear, too, at these Forum sessions, will be startling in many ways and neither they nor their patients will have to wait years to benefit from gems of scientific wisdom laboriously funneled through customary channels.

"All of this points to the important fact that physicians must not permit their professional duties to devour them; they must forever study and investigate the phenomena and mechanism of disease, thereby improving the science and art of medicine. The major contribution of the 20th century to medicine is increasing knowledge of the physiology and management of disease. The American Medical Association's role in sponsoring better scientific programs presently and in the future helps all physicians to accept the responsibility of being continuous and life-long students."

Highlighting the Research Forum program will be lectures on the following subjects:

—Cancer and thyroid function based on laboratory studies of 3,290 patients.

—Evaluation of the use of some drugs and compounds in the treatment of gastrointestinal cancer.

—Diagnosis of gastric and other forms of cancer by balloon radioautography.

—The effect of diets on cholesterol levels of men.

—Computer analysis of radioactive isotope tracer studies in man.

—The effect of cortisone and other hormones in the formation of peptic ulcers in animals.

—Use of a new enzyme agent in the treatment of pancreatic disease.

—Hypersensitivity to various foodstuffs as a factor in ulcerative colitis.

—Congenital malformations of the heart and blood vessels, including prevalence, incidence at birth and life expectancy in San Francisco.

—Evaluation of reimplantation of lungs in animals.

—The effects of cobra venom on the heart and vascular system.

—The process of perceptions or professionalization that transforms a student into a physician.

—Wound infection following potentially contaminated abdominal operations.

—Whole stomach grafting, plus irradiation, in dogs as a possible cure of ulcers in man.

—Studies dealing with the mechanisms which cause or contribute to physical incapacitation of pilots in flight.

—The effect of immediate short-term cooling on extensive burns. □

Physicians and Selective Service

During the calendar year 1961 three Selective Service calls for physicians were issued. This was the first time such calls have been necessary for several years. However, during the past year there was a decrease in volunteers and an increase in the numbers required by the Armed Forces as a result of the mobilization program. This increase in requirement was obtained by:

1. Discontinuing the acceptance of resignation of Regular Officers.

2. Denying release of those Reserve Officers who had voluntarily extended their active duty for an indefinite time.

3. Selective Service call up of 1,025 physicians.

4. Call to active duty of National Guard and Reserve Units with Medical Officers attached.

Because physicians, dentists and other medical specialists, generally speaking, are liable for military service until age 35, and because they may be called as a special group, they were given the following considerations:

1. Those in a Reserve status who were called as filler personnel on or after September 1, 1961 and who had completed at least 21 months previous active duty were given the opportunity to be released shortly after the activation of the unit.

2. Those Reserve Officers on active duty serving only their required two years were released at the end of their tour.

Because of the possibility of future Selective Service calls for physicians in time of a crisis it would be well to consider the measures which are available to ameliorate the effect on hospital staffs and civilian communities. These are:

1. **Appeal of classification of 1-A (available for military service) to the Appeal Board.**

Shortly after completion of internship, physicians are normally classified by Selective Service in Class 1-A. An appeal may be made within ten days after receipt of this classification by filing with the local board a written notice of appeal. If the physician is located in an area other than that covered by his local board he may request that his appeal be submitted to the appeal board having jurisdiction over the area where he resides.

2. **Request for determination of essentiality.**

A physician who receives a Selective Service induction notice may, if he is essential to his community or hospital and if his essentiality can be documented, request a determination of such essentiality from his local or State Selective Service Advisory Committee. Copies should be sent to the advisory committee where he is located if this is different from the committee governing the area of the board where the physician is registered. Such a request may also be directed to the National Advisory Committee to the Selective Service System, Washington, D.C.

3. **Delay in reporting to active duty.**

Physicians who have received induction notices and have been commissioned may apply to the Armed Service in which they are commissioned for a delay in reporting to their duty station. Such request must be supported by evidence of essentiality or severe personal hardship.

For those physicians who do not wish to subject themselves to the uncertainties of the draft, the Armed Forces Physicians' Appointment and Residency Consideration Program (Berry Plan) provides for a reserve commission with entry on active duty at one of the following times:

1. Immediately upon completion of internship.

2. As late as one year following internship.

3. Upon completion of residency training in specialties required by the Armed Forces.

Application may be made for participation in this program early during the intern year. □

Conference on Medical Education Held by OSMA Committee

Three groups with special interests in medical education in Oklahoma now have a better understanding of the interlocking roles they play, as a result of an afternoon conference held at Oklahoma City's Faculty House on April 25th.

The Oklahoma State Medical Association's Medical School Liaison Committee, the University of Oklahoma School of Medicine and premedical education advisors of the state's colleges and universities met to discuss their respective areas of responsibility in achieving the mutual goal of attracting the best physician-material to the Oklahoma school.

Doctor Gregory Stanbro's OSMA committee set up the conference. Arrangements were handled by committee member John R. Taylor, M.D., and OU's Associate Dean of Student Affairs, Doctor Phillip Smith.

The afternoon session began with a luncheon at the Faculty House, followed by an informal program and a tour of the medical center's facilities. R. R. Hannas, M.D., Chairman of the OSMA Council on Professional Education, spoke to the college professors about the medical association's interest in the selection of future M.D.'s, and Doctor Smith explained OU's admissions policies and procedures in detail.

During a roundtable discussion, the premedical advisors contributed many worthwhile suggestions as to how communications could be improved between the three groups.

Premedical advisors attending were: Doctor Fred W. Allen, Southwestern State; Doctor J. C. Colbert, University of Oklahoma; Professor Marval Evans, Central State; Miss Jeanett Gifford, OCW; Doctor Bryan Glass, OSU; Doctor Robert Lawrence, Bethany Nazarene; Doctor Sheridan Lee, OBU; Doctor C. A. Levengood, University of Tulsa; Doctor Thomas McKnight, East Central; Doctor Earnest Sturch, Jr., Southeastern State; Doctor A. K. Weiss, OCU; and Doctor Cecil Williams, Phillips University. □

To the Editor:

Radiologists Oppose Aged Plan

Dear Sir:

In the April issue of *The Journal,* the proposed AMA-Blue Cross-Blue Shield plan for the aged was discussed in detail by Walter J. McNerney, President of the Blue Cross Association.

Journal readers are herewith invited to read the position of the American College of Radiology, as expressed by T. J. Wachowski, M.D., Chairman of the Board of Chancellors, in his recent letter to Mr. McNerney.

More than 1,000 copies of the College of Radiology protest were sent to executives of the Blue Cross and Blue Shield plans, executives of state and specialized medical societies, and medical editors and writers.

* * *

In distributing the statement, Doctor Wachowski pointed out:

"It seems clear that from the viewpoint of inclusion of medical services that this proposed Blue Cross contract and the legislation being designed to support it is just as repugnant as the King-Anderson Bill. Further, since both the American Hospital Association and the Blue Cross have indicated that the source of federal funds is immaterial as long as Blue Cross is assigned the role of administering the program, the possibility that it will be legislatively supported through amendment of the social security law is very high. This, of course, is what is proposed in the King-Anderson legislation."

PETER E. RUSSO, M.D.
Oklahoma City

* * *

Letter to Walter McNerney:

A copy of your memorandum of February 23 addressed to chief plan executives of all Blue Cross plans in regard to a program for the aged has been forwarded to the American College of Radiology.

The College supports the offering of voluntary hospitalization insurance to all Americans and congratulates Blue Cross for recognizing the value of specially tailoring a program for those over 65. This program, the medical care offering to be made by Blue Shield, and the many plans designed by the commercial insurance industry to meet the health care costs of the aged will, we hope, be allowed to provide coverage for all desiring it in this age group without the intervention of federal legislation.

This general approval, however, cannot in honesty and good faith be extended to all particulars of your proposal. *We specifically request that medical services be excluded from this contract as it is approved by your member plans.* We urge that somewhere in the qualifying process for this contract involving approval by the board of trustees of local plans, state regulatory authorities, hospitals, or other bodies whose approval is required, that medical services be removed.

The inclusion of medical services in a Blue Cross contract, particularly one of this significance, perpetuates and magnifies a major dispute currently existing between physicians and hospitals. Physicians and all medical organizations oppose and resent the hiring of physicians by hospitals with a resale of the services of these doctors for medical fees, whether such fees are paid directly by patients, or through the medium of prepayment or insurance. The American Medical Association has noted this difference in a report officially adopted, confirmed and reconfirmed on many occasions. (AMA pamphlet "Relation of Physicians and Hospitals, 1951," Hess report)

Referring in particular to the proposed coverage of radiology services, we would note to you that radiology involves the penetration of human tissue with ionizing radiation, a matter having both somatic and genetic consequences. Blue Cross contracts which provide such coverage as a part of hospitalization encourage hospitals to practice radiology through the medium of employed radiologists. This practice pattern places authority to control radiology into the hands of non-physician administrators and boards of trustees. These men are not educated to exercise this authority in the best interests of patients, even though their intentions are undoubtedly the highest.

Particularly to be criticized in the proposed contract is coverage of outpatient radiation therapy services. Such coverage is not based on present local plan contracts, but represents a further extension of the term, "hospitalization," by a prepayment organization to include further elements of medical care. It more deeply intrudes third parties between physician and patient and, in this instance, in an area in which a clear physician-patient relationship is most important. The great majority of patients requiring radiation therapy are suffering from cancer. Best patient care in cancer treatment requires the closest possible physician-patient relationship.

It is generally agreed that the public in the United States desires and deserves the highest possible level of medical care and hospitalization. Such a level can best be attained by the development of cooperation and rapport between physicians and their organizations on one hand and hospital oriented organizations on the other. Blue Cross is certainly one of the latter. It is suggested that the Blue Cross Association could make a major contribution toward attaining the united approach that will best serve the patient-public by removal of medical services from this contract. The American College of Radiology stands ready to assist you in every way possible in accomplishing this desirable end.

T. J. WACHOWSKI, M.D.
Chairman, Board of Chancellors

SHOWDOWN . . .

(Continued from Page 222)

cine for Americans of all ages.

Further information may be obtained from the OSMA Executive Office, Box 9696, Oklahoma City. Folders on the letter-writing campaign are available in quantity to assist you in soliciting letters from your friends.

Act now, Doctor! Time is running out! □

Tulsa Surgeon Honored

F. L. Flack, M.D., veteran Tulsa surgeon (pictured right), received recognition from the Oklahoma State Medical Association when he was presented with a Fifty-Year-Pin upon completion of a half century of medical practice. Presentation of the pin was made by Earl M. Lusk, M.D., OSMA Trustee from Tulsa, at the regular meeting of the Tulsa County Medical Society on March 12.

Practicing in Tulsa since 1928, Doctor Flack served as President of the Tulsa County Society in 1956. He is a Diplomate of the American Board of Surgery and a Fellow of the American College of Surgeons.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

BOOK REVIEWS

PATHOLOGY, W. A. D. Anderson, editor, Fourth Edition (1961), Mosby Company, pp. 1389, $18.00.

The fourth edition of Anderson's **Pathology** continues to enhance the stature of this monumental work and to keep it in the vanguard of all single volumes written on the subject of pathology. The fourth edition continues to adhere to the original objectives of the editor. Although the book is extremely large and quite detailed in its content, Anderson makes no apology for this to sophomore students and feels that the use of this book is entirely justified where the teacher of pathology executes his true functions of guidance, interpretation, stimulation and encouragement. Although the students might disagree with Anderson's evaluation, there is no doubt when one can afford only one textbook of pathology, the greatest area of need is covered by this particular book. Because of its scope, it is a must for all practicing pathologists. The fact that the individual chapters are written by experts in their fields makes the book unusually authoritative.

Two new chapters have been added in this edition, including a chapter on hypersensitivity diseases re-written by Howard C. Hopps of the University of Texas, Galveston Branch, and a chapter on mesenchymal tumors of soft tissues written by Richard Shuman. Both of these areas needed mature evaluation and clarification, and they have been admirably done by these two distinguished pathologists.

The chapter on hypersensitivity states it includes the so-called collagen diseases. This chapter is written with the usual depth of knowledge and simplicity which characterizes the writings of Doctor Hopps.

The chapter on mesenchymal tumors is extremely timely. It includes a discussion of such entities as juvenile aponeurotic fibroma, nodular fasciitis and aggressive fibromatosis. Classification and delineation of the specific entities in this large field have been needed for a long period of time.—*Henry T. Russell, M.D.* □

Miscellaneous Advertisements

DENTAL OFFICE SPACE FOR RENT: Five rooms, central heating and air conditioning. Share waiting room, x-ray dark room, and bathroom with dentist in adjacent quarters. Ground floor, modest rent, heart of medical-dental area. Parking for patients. Contact W. T. McCollum, 437 NW 12th, Oklahoma City, by letter.

FOR SALE: In Norman, office equipment and medical library of late W. T. Mayfield, M.D. Also retirement home in Boston Mountains, south of Fayetteville, Arkansas. Contact Jack Luttrell, First National Building, Norman, Oklahoma.

OKLAHOMA HOSPITAL / CLINIC FOR SALE (20 bed, 1800 square feet clinic), fully equipped; established 23 years; 1961 gross $100,000 without major surgery; present owner desires to limit practice to dermatology and associate is leaving state; unopposed general practice opportunity; excellent farming community; completely air-conditioned brick; liberal terms available. Write Key A, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

WANTED EXPERIENCED G.P. to take over well established practice and well equipped offices in surburban Oklahoma City. Write Key D, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

PHYSICIAN EXPERIENCED IN general practice, insurance and industrial work wishes opening in solo or group practice, school, industrial, institutional or government work. Contact Key F., Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

ASSOCIATES WANTED—One for Internal Medicine and an Obstetrician to take over active growing practice. No financial investment. Colorado location. Write Key C, Oklahoma State Medical Association, P. O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: 100 MA Kelly-Koett X-Ray in excellent condition, used four years. Make offer. Contact A. M. Brown, Jr., M.D., The Perry Clinic, Perry, Oklahoma.

FIRST YEAR RESIDENT in Internal Medicine desires two weeks' locum tenens in June or July. Don Karns, M.D., c/o St. John's Hospital, 21st and Utica, Tulsa, Oklahoma.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

GP PARTNER WANTED: GP clinic in suburban Oklahoma City. Financial arrangements completely open first year, partnership to follow. Please give experience, training, religion, family, first letter. Desire American born veteran. Contact Key B, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: Book case, instrument case, baumanometer, microscope, Cameron electric knife, coagulator, small sterilizer, seven stainless steel instruments, tonscillectomy set and many other instruments. Contact C. O. Epley, M.D., 3124 North Youngs, Oklahoma City.

FOR SALE: 100 x 100 Keleket X-Ray. Complete with two tubes, tilt table, and all kinds of accessories. Phil White, M.D., VI 3-4701.

OSMA JOURNAL / *deaths*

GEORGE STANLEY BARBER, M.D.

1883-1962

George Stanley Barber, M.D., Lawton physician, died in Lawton March 31, 1962.

A graduate of Rush Medical College in 1908, Doctor Barber took postgraduate work in Vienna. He was a member of the Kappa Sigma and the Nu Sigma Fraternities.

Recognizing his years of devotion to the medical profession, the Oklahoma State Medical Association awarded Doctor Barber a Life Membership in 1952. □

PHIL M. LAMBKE, M.D.

1903-1962

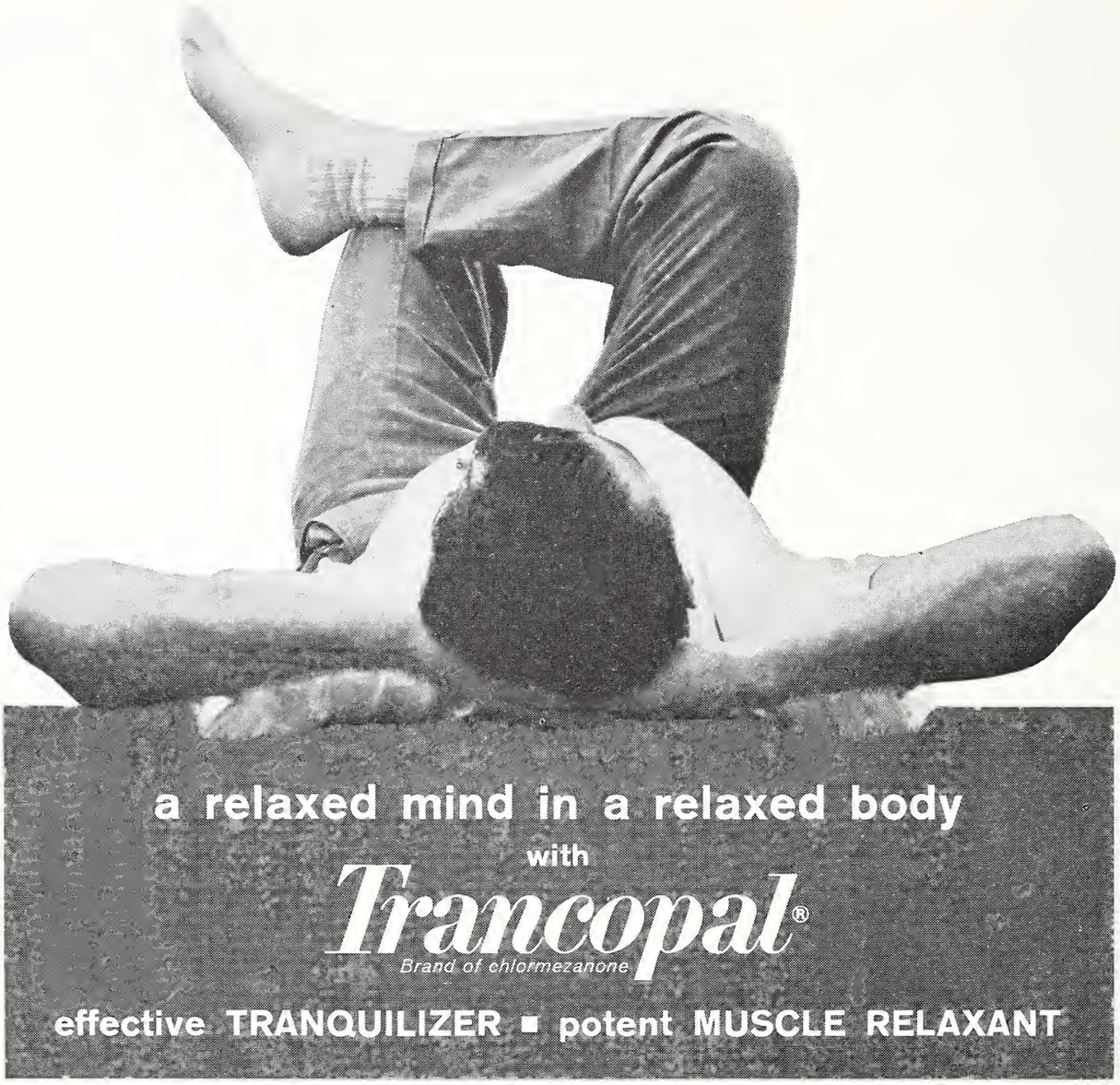
Phil M. Lambke, M.D., 58-year-old Oklahoma City physician, died April 12, 1962.

A native of Amorita, Oklahoma, Doctor Lambke graduated from the University of Oklahoma School of Medicine in 1933. He had practiced in Oklahoma City for the past 27 years, limiting most of his practice to industrial medicine. □

PHYSICIAN, age 30, with experience in general practice and surgery, wishes association or partnership with established general practitioner. Military obligation fulfilled. Contact Key G, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

* * *

Complimentary space available to members for three consecutive months. For non-members, the rate is $5.00 each month for each inch of copy or fraction thereof.



When you prescribe Trancopal you can see how this "tranquilaxant" speedily helps the anxious patient. It quiets his psyche — and this quieting helps relax tense muscles. It eases muscle spasm — and this easing helps put the mind at rest.

DeNyse[1] notes that the effect of Trancopal as a quieting agent ". . . may play a part in the skeletal muscle relaxing results obtained." Gruenberg[2] used Trancopal to treat patients with musculoskeletal disorders, and commented: "In addition to relieving spasm and pain, with subsequent improvement in movement and function, Trancopal reduced restlessness and irritability in a number of patients."

Trancopal has an unsurpassed record of safety. Very few side effects occur with Trancopal. You may see them in only about two out of a hundred patients, and they will almost always be mild.

Available: 200 mg. Caplets® (green colored, scored), bottles of 100
100 mg. Caplets (peach colored, scored), bottles of 100

Dosage: Adults, 1 Caplet (200 mg.) three or four times daily;
children (5 to 12 years), from 50 to 100 mg. three or four times daily.

Before prescribing, consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

References: 1. DeNyse, D. L. : M. Times *87*:1512 (Nov.) 1959.
2. Gruenberg, F.: Current Therap. Res. *2*:1 (Jan.) 1960.

Winthrop LABORATORIES New York 18, N.Y.

1649M

Whatever the meaning of Spring has to us individually, whether fulfillment, promise, or plain hard work, for Auxiliary members collectively, Spring means all of these. In each county we have the fulfillment of the past year's work; we have the promise of the success of the coming year. And, assuredly, the hard work which accompanied each past venture will be repeated in the future.

Each month we champion the excellent source material obtainable in our national *Bulletin*. (Do not let your subscription expire; the subscription is $1.00 annually.) Since next year's program chairmen are already beginning advance planning, consult the *Bulletin* article, "Are You Looking for a Program?" The first concerns hazards lurking in the home, with slides and distributive material listed. Attention is called to the quarter of a million products used in the home and in industry which are potentially hazardous.

The second program idea is based on maintenance of good mental health and prevention of mental illness. Our observance of Mental Health Week is too often the boundary of Auxiliary participation. Interesting programs, established with Mental Health as a goal are excellent opportunities to invite other organizations and guests.

The third idea, along with many of our established and never-ceasing goals, concerns the saga and story of A.M.E.F. This particular program plan, a story in rhyme, is short enough to be "sandwiched," if necessary, at regular meetings, especially if there is a very long business agenda.

Surely every county Auxiliary will continue and reinforce its fine work in the Legislative field. Several years ago we recommended that each member maintain a file of pertinent information. This was to be kept for personal reference. It was also recommended that each county report regularly at meetings, maintaining a reference file for members.

Recently there has been an increased onslaught against the "selfish" attitude of the medical profession, their intransigency, in regard to the proposed programs. Your files will be invaluable as source material in combatting these arguments.

Each time a national magazine publishes —and it seems to be with studied regularity —the virtues and benefits of socialized medicine, or challenges the possibility of the future of government plans, we should, and must, be ready to present factual information in rebuttal. For your files are the following:

From the *London Sunday Times*, January 1, 1961: "The doctor is just a cog in the National Health program." Two quotations from the *British Medical Journal*, January 21, 1962: "There is a disintegration of General Practitioners into wet-nurses to the members of our welfare state." December 9, 1961: "A succession of Ministers of Health and their advisors have been so immersed in the routine of their job, or so busy explaining to visitors what a marvelous thing the NHS is, that they and their staffs and the numerous administrators in the Health Service have concealed from each other and the public that medicine in Britain is in a mess." November 4, 1961: "The weekly cost of maintaining an in-patient in NHS hospitals increased an average in 1960-61 by more than eight per cent over the previous year . . . the trend toward more intensive use of beds is continuing."

We also like the article in *Time* which explained the new tax of 15 per cent on confections in Great Britain. This revenue is estimated to produce $140,000,000—which is the estimate, incidently, of the distraught dental service under National Health.

Each of these quotes is relevant; so is our attitude toward the government. Let us be proud of being called intransigeants, along with our husbands. And highly articulate ones we must continue to be. □

OSMA JOURNAL / *the last word*

More than 700 physicians attended the Oklahoma State Medical Association's 1962 annual meeting, held at Oklahoma City's Skirvin Hotel, May 5th, 6th and 7th.

A full report on the meeting, including business proceedings will appear in subsequent issues of the *Journal*, but in the meantime, here are a few highlights.

J. Hoyle Carlock, M.D., Ardmore, was installed as president; Peter E. Russo, M.D., Oklahoma City, was named president-elect; Frances P. Newlin, M.D., Shawnee, was elected vice-president; Mark R. Johnson, M.D., Oklahoma City, was re-elected secretary-treasurer; Wilkie D. Hoover, M.D., Tulsa, was tagged again as delegate to the AMA and Francis Davis, M.D., Shawnee, was elected as his alternate; Marshall O. Hart, M.D., Tulsa, and C. M. Hodgson, M.D., Kingfisher, were re-elected speaker and vice-speaker of the House of Delegates.

The House of Delegates heard several resolutions and much pro and con argument about the AMA-Blue Shield nationwide insurance plan for the elderly. After the dust settled, delegates approved a resolution from the Washington-Nowata County Medical Society which denied OSMA approval of the national service contract plan, but, at the same time, recommended the development of an indemnity type program for the old folks.

Official endorsement of the Oklahoma Medical Political Action Committee, and its national counterpart, the American Medical Political Action Committee, was given by the House of Delegates when a Tulsa County resolution was approved as being representative of a group of similar resolutions.

Delegates also approved a Tulsa County resolution which called for an annual legislative tour to the nation's capitol for the purpose of establishing better liaison with Oklahoma's lawmakers. Travel expenses are to be defrayed by the physician-participants, with the OSMA picking up the tab on receptions or dinners held for congressional representatives.

A Creek County effort to prevent the OSMA from officially negotiating or contracting for fee schedules was sidestepped by the delegates. In a separate action, a Grady County resolution calling for a study and readjustment of fees for the care of welfare recipients was referred to the OSMA Committee on Public Welfare for action.

The usefulness of oral polio vaccine was recognized by the delegates, and its application was urged on a community-immunization-program basis. Where community programs can be initiated by May 21st, Type I should be given first, with Type III given as a second dose during June, and Type II made available in the Fall. Continued use of killed parenteral virus vaccine was also encouraged by the action.

OSMA's Council on Professional Education received approval for an expanded educational program for the coming year, to include the presentation of eight decentralized postgraduate refresher courses and the production of twelve television programs over Oklahoma's educational channels.

In approving the AMA's so-called "Bauer Statement," which states that the profession will not be a "willing" party to implementing any health care system believed to be detrimental to the public welfare, the OSMA House of Delegates added the footnote that Oklahoma physicians will continue to provide health care to all who need it, regardless of ability to pay.

On the lighter side, the OSMA's 1962 golf tournament, played May 7th, at the Oklahoma City Golf and Country Club, was won by John M. Carey, M.D., Oklahoma City, who carded a gross score of 76. Powell E. Fry, M.D., Stillwater, took the low net trophy with an adjusted score of 70.

The American Medical Association's 111th Annual Meeting will be held in Chicago's new McCormick Place, June 24-28. In conjunction with the meeting, the American Medical Political Action Committee will hold a $25/plate banquet at the Palmer House, featuring Senator John Tower (Tex.) and Representative Harold B. McSween (La.) as speakers.

NEWSLETTER

OKLAHOMA STATE DEPARTMENT OF HEALTH
OKLAHOMA CITY, OKLAHOMA

May 1, 1962

HOSPITALS AND THE HEALTH DEPARTMENT

The influence of a hospital has far-reaching effect upon medical practice. The Health Department, through the Hill-Burton program, is deeply involved in hospitals--planning the state needs, assisting communities in their plans for hospitals and administering funds for construction purposes. Since the origin of the Hill-Burton program in 1947, seventy-one communities in Oklahoma have benefited by this program. More than 4,000 new and replacement general hospital beds have been provided; and 222 beds for chronic and convalescent hospitals have been provided.

One of the major responsibilities of the State Health Department in administering Hill-Burton funds is the annual development of a State Plan which will assist in determining the need for the establishment, improvement, or expansion of hospital and medical facilities in those areas of the State demonstrating the greatest relative need and having the least financial resources. In assuming this responsibility, the State Health Department has made full use of a legally constituted Advisory Council under the chairmanship of Doctor W.K. Haynie of Durant.

Hospitals must be geared to meet the challenge of changing patterns of care and technological advances by providing proper and adequate facilities. Accordingly, the service of the Health Department in planning hospital and medical facility requirements on a statewide basis and assisting communities to determine their hospital needs is of vital importance to all practicing physicians and to the total health program of Oklahoma.

(A SUPPLEMENT TO THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION)

The People

SENATOR Robert S. Kerr, in all sincerity, gave just the address that everyone wanted to hear as the closing note of the 56th Annual Meeting of the State Association. He will oppose any effort to jeopardize the practice of medicine as a part of the free enterprise system and will face with courage and optimism the challenge of the space age.

In my warped mind, though the words sounded real fine coming from Senator Kerr, there is an incongruity about them that cannot be reconciled. It is as if medicine will stay in its horse and buggy while the rest of America concerns itself with the money and the energy and the know-how to land a man on the moon. This, of course, is not true. Medicine is also changed by advances in knowledge and technology. Perhaps it would be well to examine a word or two and see if they mean the same thing to all of us. I have the impression that when something is done collectively by the free people of America of which approval is near unanimous, it is the free people of America who do it; but when something is done by essentially the same mechanism that has much less general approval, it is government that does it. If we go back to our origin, our roots, we must think of these actions, too, as *the peoples.*

"We hold these truths to be self-evident: That all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty and the pursuit of happiness. That, to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed; that, whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute a new government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness." This from the Declaration of Independence 1776.

This theme of *the people* was continued in the Preamble to the Constitution (1788): "We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America."

Lincoln in his Gettysburg address reaffirmed *the people's* role "That this nation under God, shall have a new birth of freedom —and that government of the people, by the people, for the people, shall not perish from the earth."

The fifteenth Amendment began the inclusion of the Negro as a part of *the people*: "The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any state on account of race, color, or previous condition of servitude" (1870).

With the twentieth Amendment (1920), women moved from behind the scenes and became also *the people*: "The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex."

The government is *the people.* It is inconceivable, then, that the people will secure for themselves the advantages of the development in all areas of science except medicine. Indeed there is already abundant evidence that they have and are including medical science—Hill-Burton funds for health facility construction, grants for research and development from the National Institutes of Health, aids and grants to the State Departments of Health and Departments of Welfare for securing community health and to assist in the medical care of the less fortun-

ate and many, many other areas in which the people have and are concerning themselves.

It is time for me to give up the editorship of the *Journal,* for after 34 years of practice of medicine and eight years of sitting on the side line at the Association's office, I am most confused and bewildered. We are all of the opinion that it would be a serious blow to the welfare *of the people* if government got into the business of supplying medical care. I would consider this true on the basis of two scores alone: 1) It would, in time, deprive *the people* of the security they possess and often greatly need of having their own doctor and, 2) more important, it would be disastrous for the future of medicine because it would deprive it of much of its appeal for young people interested in vocations of service of the kind that our medicine presently is.

Our leaders seem to lack a sense of history and a sense of destiny. *The people* have been pulling the objectionable talons of the free enterprise system since the country began. Eleven colonies favored including the statement in Jefferson's original draft of the Declaration of Independence abhorring the importation of slaves. South Carolina and Georgia wouldn't sign if this was left in. It was deleted but the slaves were freed during the Civil War. Special interests against the welfare of *the people* are rendered harmless—the Anti-trust laws, proration of oil, rate setting by the corporation commission, pure food and drug laws, and many, many others. The wording included in the Interstate Commerce Commission Act of 1887 is worthy of note—(railroad) rates must be "reasonable and just."

The AMA has, in effect, asked us to make medical fees reasonable and just while we are still able to do so ourselves, so that the people can budget for medical care as they can and do for everything else. This necessitates a service plan, a device of the socialist, so it is said. Call it what you like, it is made necessary not by the socialist but by the unconscionable physician, of which there are relatively few, but these few give medicine a horrible stench. How can these few find so much support from those who are reasonable and just? One would think they would welcome a technique of imposing decent behavior, since there has never been one.

Our destiny is to make available to all *the people,* rich and poor alike, those who can pay their way and those whose care must be subsidized, the benefits of an ever changing and advancing medical science. Our system must be able to do this or fall by the wayside. We seem to be unable to embrace the future; to mold ourselves to encompass change and instead give our support, against strong advice of counsel, to an organization over which we have no control but which is to determine our future by political action—a sort of demolition squad who will surely destroy our future by its energetic efforts to maintain the status quo. What an ending for a glorious profession—to face the future with the head turned to look back.—*B.H.N.* □

C. B. Dawson, M.D., Editor-in-Chief

FOR THE FIRST time in its long history, the *Journal* has in Doctor Dawson, a home grown and educated product for Editor-in-Chief. The son of school teachers who taught in the peripatetic period, he lived in many parts of Oklahoma before getting his academic degree at OSU and his M.D. from the University of Oklahoma School of Medicine. No stranger to the military, he served two years with the navy in the Pacific; no stranger to medicine and to teaching, he is a Urologist in active practice and Associate Professor of Urology at the Medical Center; no stranger to his new job, for he was editor of the Oklahoma County Society Bulletin for a number of years and was selected by the Trustees to fill the unexpired term of Don Branham on the *Journal's* Editorial Board. Benton Dawson will do a fine job for the Association but if he is to do his best job, the *Journal* needs to be thought of when good material is presented anywhere in the state—county societies, district societies, regional meetings, specialty meettings, and hospital staff meetings. □

The Executive Secretary

Dick Graham has resigned. In stepping aside for less rigorous activities, Mr. Graham's departure marks the end of an era in the history of the Oklahoma State Medical Association; an era spanning twenty-four years of growth and development.

He came to us in 1938 and helped establish the first permanent office of the association. From that time on, Mr. Graham served as the hub of our organizational activities and was a dedicated friend of the profession. Much of the credit for the progress of the OSMA belongs to him.

Succeeding as Executive Secretary is Mr. Don Blair, Associate Executive Secretary for the past seven years. The competence, interest and intelligence of Mr. Blair have been well proved.

Eight years of watching Oklahoma Medicine from the sidelines has taught me that the real continuity of effort and purpose in the Association rests in the hands of the executive administration at the state office. If this is to be really effective, the executive must be a genuine part of things and not considered just an employee. He must reflect the minds, the thinking, the operations, the philosophy of those who are presently active to those who are to come after. It is his advise that must be sought on selection of people for tasks and committee appointments for he knows who will work and who will not, and this has nothing to do with their medical competence or personal attractiveness.

In Dick Graham, Don had excellent training under a master at the job, and he will be a tremendous asset to the Association.—*B.H.N.* □

Those of you who attended the Annual Meeting of The Oklahoma State Medical Association in Oklahoma City early in May enjoyed an exceptionally fine affair. It is felt that the general caliber of the meetings are definitely improving. Many out-of-state physicians commented very favorably on the organization, the quality of the guest speakers and the practical scientific material presented.

This splendid performance was due in large measure to the long diligent hours spent by the General Chairman, J. R. Stacy, M.D., and Program Chairman Rex E. Kenyon, M.D., with their subcommittee Chairmen, Robert Sukman, M.D., John D. Engles, M.D., and Stanley R. Campbell, M.D. The members of their committees are to be highly complimented and sincerely thanked for the successful results of their labors.

Don Blair, OSMA Executive Secretary, and his fine staff are to be praised for their comprehensive work of coordination.

We would be remiss lest we express gratitude for the volumes of prior planning done by our immediate Past-President Clinton Gallaher, M.D., The Speaker of the House of Delegates, Marshall O. Hart, M.D., and his associate, C. M. Hodgson, M.D., that made for expediting efficiently the proceedings of The Board of Trustees and The House of Delegates.

Donald L. Brawner, M.D., has kindly consented to be General Chairman of the 1963 Annual Meeting of the Oklahoma State Medical Association in Tulsa. He was Program Chairman for the Tulsa Meeting in 1961 and is qualified by experience for this undertaking. We can count on its being another outstanding meeting. Make your plans now to attend the ever growing Annual OSMA Meeting in May.

Although a large portion of OSMA business is transacted at the Annual Meetings, and an increasing amount of time is spent on impending legislative measures, we must ever keep foremost the propagation of scientific knowledge, to the end that our postgraduate training will keep the Doctors of Oklahoma expertly qualified to bring the highest standards of medicine to the people of our great State.

J. Hoyle Carlock, M.D.

a medical milestone at America's crossroads

AMA 111th Annual Meeting

CHICAGO'S MAGNIFICENT McCORMICK PLACE • JUNE 24-28, 1962

This is Chicago's splendid, new exposition center offering every conceivable convenience in the nation's most exciting convention city. More than a convention hall, McCORMICK PLACE is a complex of unobstructed exhibit area, spacious meeting rooms, beautiful theaters, glamorous restaurants and lounges, and colorful promenades adjacent to huge parking lots and enticing lagoons. And in this spectacular setting on the shores of Lake Michigan just a summer stroll from midtown hotels, stores and entertainment districts, air-conditioned McCORMICK PLACE offers you the unsurpassed opportunity to participate in the most comprehensive of all medical meetings, the ultimate in post-graduate education.

IT'S ALL FOR YOU ★ CONVENIENT, COMPACT, AND AIR-CONDITIONED ★ AT THE CROSSROADS CHICAGO ★ THE PLACE TO KEEP PACE IS McCORMICK PLACE!

Here, completely assembled—all in this one building—will be the greatest cross-section of every medical interest:

★ More than 200 eminent scientists in the Multiple Disciplinary Research Forum

★ Eight general programs, never before scheduled, by the combined specialties

★ Over 700 exhibits staffed by top researchers and expert technologists

★ Surgical innovations and symposia on live color TV and motion picture premieres

★ Special daily features representing each medical discipline—and countless other vital programs to serve you in your practice

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago 10, Illinois

See JAMA May 19 for complete scientific program . . . for physician advance registration and hotel reservation forms

OSMA JOURNAL/scientific

Hemolytic Anemia From Brown Spider Bite

Necrotic Arachnidism

JOHN F. NICHOLSON, M.D.*
BEN H. NICHOLSON, M.D.

GOTTEN AND MacGowan,[1] in 1940, reported from Mississippi, a case of hemolytic anemia in a three-year-old girl following the bite of a large, brown spider. To our knowledge,[6] there has been no report of a similar instance since then, although it is our impression from conversations with physicians in the South and Midwest, that the association of brown spider bite and hemolytic anemia is fairly well recognized in these areas.

We wish to report two cases which we believe fall into this category.

Case 1. This healthy, six-month-old white girl was bitten on the neck by a "little brown spider" on the evening prior to her admission to Wesley Hospital in Oklahoma City. She had few immediate symptoms, but on the following morning the area of the bite was quite swollen and ecchymotic, and her urine was grossly "bloody." She rapidly deteriorated, becoming pale and jaundiced, and was brought to Wesley Hospital, moribund, at 1:20 p.m. on December 1, 1956. *Physical examination* revealed, in addition to the pallor and jaundice, massive hepatosplenomegaly and evidence of vascular collapse. The area of swelling and ecchymosis surrounding the bite measured six cm. in diameter. *Laboratory Data*: Hemoglobin—5.1 gm. per cent. WBC—43,500. Polys—50 per cent. Stabs—21 per cent. Lymphs—29 per cent. Direct Coombs' Test—negative. *Course in the hospital*: Steroids were administered, and digitalization was begun, immediately, followed by transfusion with 130 cc. of whole blood. None of these measures was of any avail, and the infant died within one hour of admission. *Autopsy* revealed acute pulmonary edema; heme casts in many renal tubules, and pink staining material in others, suggestive of early hemoglobinuric nephrosis.

Case 2.[6] B.M. VUH #288087. This healthy, four-year-old white female from Lewisburg, Tennessee, was noted to have a

*Present Address—Babies Hospital, New York City.

John F. Nicholson, M.D., is a National Foundation Fellow in Biochemistry in the Department of Pediatrics at Columbia University.

Ben H. Nicholson, M.D., is Clinical Professor of Pediatrics at the University of Oklahoma School of Medicine.

bite-like lesion in front of her left ear on the day prior to admission. A negative child at best, she denied any sort of bite. The lesion was somewhat painful when first noted, and there rapidly developed an areola of ecchymosis and edema. Late in the day her urine was noted to be dark, and on the following morning it appeared to be grossly "bloody." She was seen by her local physician and referred to Vanderbilt University Hospital in Nashville, Tennessee. *Physical Examination* on admission revealed her to be moderately ill with T-100,[6] P-136, R-36. There was a punctate lesion just anterior to the left ear. The left eye was blackened and closed, and the left side of the neck and the presternal area were markedly edematous. Aside from moderate scleral icterus, the remainder of the physical examination was normal. *Laboratory Data*: Hemoglobin — 9.7 gm. per cent. PCV—25 per cent. MCHC—39 per cent. Plasma showed gross hemoglobinemia. WBC—3400. Polys—37 per cent. Stabs—seven per cent. Eosinophiles—two per cent. Basophiles—one per cent. Lymphocytes — 54 per cent. Monocytes—four per cent. Platelets—176,000. Serum bilirubin—0.4 mg. per cent direct, 2.3 mg. per cent indirect. Urinalysis revealed marked hemoglobinuria, but no other abnormality. *Course in the Hospital*: Because of the severe character of the hemolytic process, and the fear that hemoglubinuric nephrosis might develop, exchange transfusion was performed shortly after admission, using 2000 cc. of whole blood in 100 cc. increments. The child was also given steroids, antibiotics and tetanus prophylaxis. Twenty-hours after admission her urine was hemoglobin-free and her PCV was stable. She experienced no further systemic difficulty; the local lesion healed slowly, but completely, without slough.

Loxosceles reclusus

Photograph of a painting which Doctor Harold Shoemaker caused to be done. This, along with one of Lactrodectus mactans, the black widow, was given to the Poison Information Center after Doctor Shoemaker's death by Mrs. Shoemaker. The spider is not large, the body measuring eight to nine mm. in length. Note the characteristic violin shaped black mark extending posteriorly from the eyes over the cephalothorax. Though known as a small brown spider, it is not always brown, but may vary from yellow or orange to a dark brown. Necrotic arachnidism is not uncommon in central Oklahoma, but there is apparently little awareness of the danger of the hemolytic process that may accompany it. While the evidence against L. reclusus is largely circumstantial, it is, nevertheless, convincing.

DISCUSSION

While no history of spider bite was obtained in Case 2, the clinical picture is strikingly similar to that of Case 1, and to that reported by Gotten and MacGowan. If the three cases can be lumped together, there is apparently a brown spider whose bite is capable of producing a severe hemolytic anemia and a striking local lesion. The identity of the spider is in doubt, but in one similar case not seen by the authors, the spider was said to be identified as *Loxosceles reclusus*.[2] This spider is widely distributed in the central and southern United States, is of medium size, and varies in color from yellow to dark brown.[3] Its bite is known to produce a severe local lesion (frequently necrotic),[3,4] but has not been incriminated in the literature as a cause of hemolytic anemia. However, a member of the same genus, *Loxosceles laeta*, which is found in South America, produces a similar local lesion and in about ten per cent of cases, a rather severe hemolytic anemia.[5] The pathogenesis of this hemolysis has not been established.

Little can be said about therapy in the present state of our knowledge. Steroids were used in both of our cases, and have been recommended for the hemolytic anemia associated with the bite of *L. laeta*.[5] Steroids

and antihistamines have been used for the local lesion in South America. Tetanus prophylaxis is indicated, as with any contaminated, tissue-destructive, wound. Exchange transfusion appeared to be dramatically effective in Case 2, but is obviously not a routine procedure.

SUMMARY

Reported are two cases of acute hemolytic anemia in childhood, presumably caused by the bite of a brown spider. It is suggested that the spider in question is *Loxosceles reclusus,* and that the clinical syndrome is analogous to one produced in South America by *Loxosceles laeta.*

We obviously cannot make any definitive statement in this report, but we do hope to stimulate communication regarding this interesting condition, and to begin a more systematic investigation of it. We are eager to hear of similar cases, and if possible, to examine the villainous arachnids responsible. □

REFERENCES

1. Gotten and MacGowan: J.A.M.A. 114: 1547, 1940.
2. A. W. Pierce, Jr., M.D. (personal communication).
3. Atkins, Wingo, Sodoman and Flynn: Am. J. of Tropical Medicine and Hygiene 7 (2): 165, 1958.
4. Blattner: J. Pediatrics 53: 377, 1958.
5. Schenone and Prats: A.M.A. Archives of Dermatology 83: 139, 1961.
6. Case 2 was included in case reports and review of the literature by Walter E. Nance whose paper also contains a discussion of the nature of the hemolytic process. Am. J. Med. 31: 801 (Nov.) 1961.

AMA CHARGES RIBICOFF

On May 9th, an official of the American Medical Association called on Attorney General Robert Kennedy to investigate whether Welfare Secretary Abraham Ribicoff has committed a criminal act by publishing a booklet on health care of the aged.

F. J. L. Blasingame, M.D., executive vice president of the AMA, said he had wired the attorney general after studying the booklet issued by the Department of Health, Education and Welfare. Doctor Blasingame declared:

"This booklet lobbies for the enactment of the King-Anderson Bill. This bill would raise social security taxes to provide limited health services to aged beneficiaries, regardless of whether they need financial help.

"The Department of Health, Education and Welfare has used tax funds, collected from everyone, to propagandize for a bill which many people and many groups have vigorously opposed. Under law, the publishing of this kind of a booklet without congressional authority is a criminal act, punishable by fine or imprisonment, or both, and removal from office.

"I believe that the Justice Department should investigate this matter and I have wired Attorney General Robert Kennedy to this effect."

In making the charge, Doctor Blasingame cited the United States Code Annotated, Title 18, Crimes and Criminal Procedure, Section 1913, which states:

"No part of the money appropriated by any enactment of Congress, shall, in the absence of express authorization by Congress, be used directly or indirectly to pay for any personal service, advertisement, telegram, telephone, letter, printed or written matter, or other device, intended or designed to influence in any manner a Member of Congress, to favor or oppose, by vote or otherwise, any legislation or appropriation by Congress, whether before or after the introduction of any bill or resolution proposing such legislation or appropriation . . .

"Whoever being an officer or employee of the United States or of any department or agency thereof, violates or attempts to violate this section, shall be fined not more than $500 or imprisoned not more than one year, or both; and after notice and hearing by the superior officer vested with the power of removing him, shall be removed from office or employment."

Doctor Blasingame said that Congress had not authorized publication of the booklet. He pointed out that Congressman John W. Byrnes (R., Wis.) has protested the spending of tax funds for the booklet. Byrnes asked the comptroller general to refuse to approve payment of the printing costs.

MYOTONICA DYSTROPHIA

BARTIS M. KENT, M.D.
WILLARD L. McGRAW. M.D.

A relatively rare condition, myontonica dystrophia, is discussed and a case is presented which demonstrates the various manifestations of this disease.

MYOTONICA DYSTROPHIA (Steinert's Disease) is a condition generally considered rare. It was long included under the diagnosis of myotonia congenita. In 1909 Batter and Gibb[1] as well as Steinert recognized the distinction between the two conditions and reported myotonica dystrophia, or myotonia atrophica, as a separate syndrome from myotonia congenita or Thomsen's disease.

It is a heriditary disease manifested by atrophy of muscles rather than hypertrophy as in Thomsen's disease. The muscle involvement is rather limited, usually muscles of the face, sternocleidomastoids, muscles of the forearms, extensors of the legs, and dorsiflexors of the feet. Muscular involvement is characterized by persistent contraction of the affected muscles with slow relaxation. This is in contrast to Thomsen's disease which is generalized. There are usually changes in the voice due to involvement of the pharnygeal muscles. The voice has a low-pitched nasal quality; the speech is slurred and difficult to understand. Myotonia atrophica has other findings which are characteristic: premature baldness, lenticular cataracts, and testicular atrophy. It is an inherited disease being transmitted as a dormant gene.[4] It typically occurs in the third or fourth decades of life. The disease, however, appears to occur earlier as successive generations are affected.[5]

Colloidal goiters have been reported as a prominent feature of this disease. These are usually associated with normal function of the thyroid, however.[2] Cardiac involvement has also been reported. This usually consists of bradycardia, hypotension and cardiac enlargement. Electrocardiographic examination in these patients usually shows a disturbance in conduction mechanism.

A patient presenting classical involvement with this disease has come under our care at the Veterans Administration Hospital in Muskogee, Oklahoma and is being presented here.

CASE REPORT

A 42-year-old laborer (L.E.J.) was admitted to the Muskogee Veterans Administration Hospital on August 2, 1960 with a complaint of difficulty in swallowing of one week's duration which had reached a degree of severity that prevented an adequate intake of food. There was also difficulty with speech. His illness dated back to 1953. He had been admitted to the San Francisco VA Hospital in August, 1953, complaining of weakness in his legs since his discharge from

the army. He had served five months in the army and had been given a medical discharge in March, 1943. He had been athletic during his youth; however, he had gradually been restricted in his work over a ten year period. Following discharge from the army, and at the time of entry into the hospital, he could not walk more than 30 minutes without becoming fatigued.

Neurologic examination at this time revealed a generalized weakness with atrophy of muscles, more apparent in the extremities. Eyesight was poor. Roentgenograms of the skull and chest, electrocardiogram, electroencephalogram, routine blood and urine studies were normal. B.U.N. was 8.7 mg. per cent; creatinine 1.1 mg. per cent. Glucose tolerance test was normal as was serum cholesterol level (186 mg.%). B.M.R. was minus 14. I^{131} was reported as follows:

Hours	Uptake	Conv. Ratio	Plasma Bound I^{131}
4 hr.	4%	0.6	6.7%
7 hr.	6.8%	0.57	7.1%
24 hr.	13%	0.59	8.2%
48 hr.	14%	0.55	40.0%
72 hr.	13%	0.25	33.9%

The patient was diagnosed as having myotonia congenita and was treated with quinine. He showed marked improvement on 21 grs. quinine daily and had been discharged on this dose.

The patient remained on quinine with improvement. However, he developed some recurrent weakness and had been readmitted to the San Francisco VA Hospital for fever therapy with typhoid vaccine on January 25, 1954. This had been done without evident improvement of the condition, and the patient had been discharged to remain on quinine.

He had again been admitted to the San Francisco VA Hospital in 1956, at which time reported laboratory studies were again normal. Seventeen-ketosteroid excretion on this occasion was 15.4 mg./24 hrs. I^{131} was reported as follows:

Hours	Uptake	c/s Plasma Bound Iodine
24 hr.	9.9	2.0%
72 hr.	10.8	19.2%

Pronestyl 25 mg. q.i.d. was started with some improvement on this occasion.

On admission to the Muskogee VA Hospital on August 2, 1960, the patient was complaining of difficulty with swallowing which had become much worse one week prior to admission. With onset of this difficulty he had also noted difficulty with his speech. The weakness of his arms and legs had continued.

On physical examination the patient appeared chronically ill. He talked with an explosive type speech in a monotone with poor enunciation due to slurring. He had a hoarseness and was required to clear his throat frequently to phonate audibly. He had a mask-like face. He had mild alternating external strabismus. The pupils reacted to light. Cataracts were present bilaterally. He was unable to open his mouth to the normal width or to protrude the tongue to the normal distance. The thyroid was not palpable. The blood pressure was 110/80; pulse 90. Heart was normal in size and shape. The rhythm was regular and heart sounds were normal. Abdomen was normal. Testes were small, but not thought to be atrophic. There was moderate atrophy of the musculature of the upper and lower extremities with marked atrophy of the palmar interosseous muscles. On walking he raised his feet abnormally high with normal length of stride. The neurologic examination showed no marked abnormalities.

Electrocardiogram on admission showed a left bundle branch block. Roentgenogram of

---

A graduate of the University of Oklahoma School of Medicine in 1944, Willard L. McGraw, M.D., is now with the Veterans Administration Hospital in Muskogee, Oklahoma.

A graduate of Baylor University College of Medicine in 1948, Bartis M. Kent, M.D., has been certified by the American Board of Internal Medicine.

Now with the Veterans Administration Hospital in Muskogee, Oklahoma, Doctor Kent is a member of the American Society of Internal Medicine, the American Society of Nuclear Medicine and an associate of the American College of Physicians.

the chest was interpreted as showing Fleischner lines of linear atelectasis at the bases. The heart was slightly enlarged.

Urinalysis, after intravenous glucose infusion, reported specific gravity as 1.029; microscopic examination was negative for cells; glucose four plus; protein was negative. Hemogram report showed W.B.C. 4,200; neutrophiles 53 per cent; lymphocytes 42 per cent, monocytes four per cent, and eosinophiles one per cent; hematocrit 51 per cent, hemoglobin 16.2 grams. Creatinine excretion was 1.74 grams in 24 hours; creatinine excretion 0.264 grams in 24 hours. P.S.P. excretion was 64 per cent for the first hour and 16 per cent for the second hour; total excretion 80 per cent in two hours. Glucose tolerance test was reported as follows:

	Fasting	One Hour	Two Hour	Three Hour	Four Hour
Blood Level mg. %:	82	158	121	126	84
Urine:	Neg.	Neg.	Neg.	Neg.	Neg.

Thymol turbidity was five units; cephalin flocculation one plus in 48 hours. B.S.P. retention was 21 per cent. Serum electrophoretic pattern was interpreted as normal.

The patient was treated initially with five per cent glucose in normal saline. He improved during the evening with ability to swallow normally the next day. He had increased function of the muscles of the face and extremities the following day. He was observed until October 17, 1960 with no need for active medication during this time. He was then discharged from the hospital and has been followed on out-patient basis as indicated.

SUMMARY

A case of myotonica dystrophia is presented which demonstrates the various manifestations of the disease which include:

1. Atrophy of the muscles of the face, forearms, extensors of the legs, dorsiflexors of the feet, and sternocleidomastoids.
2. Marked change in voice with difficulty swallowing.
3. Premature baldness.
4. Lenticular cataracts.
5. Cardiac involvement.
6. Indication of hypothyroid activity.
7. Testicular atrophy, possibly.

This case is representative of the chronicity of the disease with periods of exacerbation and remissions. □

REFERENCES

1. Batter, F. E., and Gibb, H. P.: Myotonic Atrophica. Brain, 32: 187 (1909).
2. Bender, C. E., Maletskos, C. J., Hutchinson, J. C., and Thomas, E. B.: S. M. Studies of Thyroid Function in Myotonic Dystrophica. American Journal of Medical Science, Vol. 228, p. 668 (1954).
3. Fisch, Charles: The Heart in Dystrophia Myotonica. American Heart Journal, Vol. 41, p. 525 (1957).
4. Rarin, A., and Waring, J. J.: Studies in Dystrophia Myotonica: I. Hereditary Aspects. American Journal of Medical Science, Vol. 197, p. 593 (1939).
5. Waring, J. J., Rarin, A., and Walker, C. E.: Studies in Dystrophia Myotonica. Archives of Internal Medicine, Vol. 65, p. 763 (1940).

Veterans Administration Hospital
Muskogee, Oklahoma

CHICAGO MEETING OF AMPAC

Senator John G. Tower of Texas, and Representative Harold B. McSween of Louisiana will be two of the top speakers at the $25-a-plate banquet given by the American Medical Political Action Committee Sunday, June 24th, 7 p.m. in Chicago's Palmer House, Grand Ballroom.

Physicians and their wives, as well as others interested in political education and action by the medical profession, were urged by Doctor Gunnar Gundersen, AMPAC's chairman, to attend the banquet and participate in other activities scheduled for the day. Doctor Gundersen said more than 750 persons were expected to join Senator Tower and Representative McSween at dinner, reservations for which are now being made through AMPAC, 520 N. Michigan Ave., Chicago 11, Illinois.

"Many physicians and their wives who had planned to arrive Monday for the AMA's 111th Annual Meeting have now re-arranged their schedules to arrive Saturday or Sunday," Doctor Gundersen said. "The profession is fast awakening to the need for effective, concerted political action. This is evidenced by the snowballing support being given state political action committees and AMPAC itself."

Regional and Community Planning for Health Facilities*

PAUL A. SNELSON

FOREWORD

FOR QUITE some time there has been a growing interest in the philosophy that any planning for services or facilities directly affecting a given community, and ultimately depending upon that community for its continued support, can be more effectively implemented through properly oriented local leadership and participation.

The philosophy itself is not new. Quite the contrary; it is age-old and has been one of our dominant principles of government since its beginning. Originally, a centralized government was founded which included in in its purpose a desire to, "Form a more perfect Union and to promote the general welfare." There was no expressed intent to usurp or to supplant the rights of the individual states. Seemingly, there has been considerable evidence that these tenets have been rather loosely interpreted and perhaps disregarded throughout the years, yet it must be conceded that the vast economic, industrial and social development of our great country has been the result of a strong National government working in harmonious relationship with its governmental components, the various communities, its citizens and with private enterprise. This is as it should be and represents the Americans' way of life.

How can these principles be applied to the broad general subject of Health, and more specifically, to the planning for health facilities and services in a state, in a regional area and in a community?

The answer is simply an awareness, willingness, and the initiative at each of these levels to understand and an effort made to solve its own problems first, and then, fused into one effective coordinated program so that the greatest number of our population may have the benefit of proper and adequate health services and facilities.

THE SITUATION

What is the problem that confronts us? One of the most prevalent problems of hospital planning is mal-distribution of existing facilities. Some areas or communities have a disproportionate number of beds, the result of which engenders competitiveness and costly duplication of services and facilities. On the other hand, some are woefully deficient, and in some instances, totally lacking in facilities and/or beds.

Another problem is an imbalance of the appropriate type of facilities and beds to provide properly for the total needs of the community.

*Presented at the 1961 Annual Meeting of the Oklahoma State Hospital Association, Tulsa, Oklahoma, November 2, 1961.

Still another problem is the matter of utilizing existing personnel resources to the best possible advantages. We are quite aware of the deficiency of nursing, medical and para-medical personnel. Also, we are aware of the frustrations in trying to cope with this problem, nevertheless, it is quite evident that none of these problems will be satisfactorily resolved in the very near future. The challenge is, therefore, to make judicious use of what we have and to make whatever contributions possible to participate in training and recruitment programs.

Added to the foregoing are these salient and perhaps disturbing facts.

1. General hospitals are continually expanding.
2. Obsolescence is rapidly catching up with many of our existing facilities.
3. Specialized facilities are being modernized, expanded and established at a rapid pace.
4. While the length of stay in general hospitals has been gradually decreasing during the past 15 years, the total number of both admissions and patient days have shown a marked increase.
5. Medical technological advances within the past two decades have had a decided, almost revolutionary, effect upon the techniques and procedures in practically all types of hospitalization and health care.
6. Because of this constant change, there have been attendant increases in the cost of total health care and an increase in the capital plant investment of more than 75 million dollars in general hospitals alone in the State of Oklahoma during the past ten years.

Since the costs of health care must be borne by the populace, either directly or indirectly, and a substantial portion of the capital plant investments are being provided by the public, the necessity for cooperative action is becoming increasingly apparent. There is an urgent need for sound, cooperative and coordinated planning so that the individual hospitals can gear their improvement programs to the changing medical, social and economic patterns, and to assume their proper perspective in a program of total health needs in the community.

PLAN OF APPROACH

During this past year the Oklahoma State Hospital Association, through its President and Board of Directors, and the State Agency for the Hill-Burton program have given the matter of coordinated planning serious consideration and have arrived at a proposed plan of action designed to promote this objective. Simply stated, it is an earnest, sincere encouragement to promote, establish and maintain responsible and effective planning groups at both the community and regional levels. These groups would, in turn, coordinate their planning activities with the Hill-Burton State Agency.

It was considered appropriate that the plan initially be placed on a voluntary basis and if proved to be acceptable, effective and desirable, it could later be given legal status, if indicated, by means of State legislation.

Preparatory to the development of such a plan, it was necessary for the State Hospital Advisory Council to develop and adopt a set of principles which would serve as a procedural foundation, especially as it related to Hill-Burton activities. It should be borne in mind that these principles are not mandatory; they merely represent a statement of facts as understood by the Council and a suggested method to achieve a sound, orderly progression of planning activities.

It is a privilege to present this five-point outline, not only to the general hospitals, but to all health groups, individuals or agencies concerned with some aspect of health facilities and services in Oklahoma. Here-

---

Paul A. Snelson is Director of the Hospital Construction Division of the Oklahoma State Department of Health. From 1946 to 1960, he was Director of the Hospital Division, administering the licensure programs of hospitals, rest homes and nursing homes.

Mr. Snelson is a member of the American Association for Hospital Planning, the Medical Center Committee of the Oklahoma City Chamber of Commerce, the Health Facilities and Services Survey Steering Committee of the Oklahoma City Community Council, and an honorary member of the Oklahoma State Hospital Association.

with are the Principles and Plan for Statewide Coordinated Planning.

PRINCIPLES AND PLAN FOR STATEWIDE COORDINATED PLANNING

Point 1. Need for Coordinated Planning.

Determining the total health needs for our entire populace is too comprehensive for any one particular agency or group to undertake. While a vast majority of people who are hospitalized are admitted to general hospitals, it should not be erroneously assumed that an acute general hospital will fulfill all of the total health needs and responsibilities. Comprehensive health service also includes long-term care for the chronically ill, communicable disease, psychiatry, psychology, diagnostic and treatment centers, social and rehabilitation services. Some of these are more or less limited to a community-wide service, others, on an area or regional basis, and still others, limited to state-wide services.

Because of the variety of facilities, and in their ownership or control, a very complex situation exists that presents difficult problems of planning unless some method of coordination is established to bring all of the problems into one focal spot.

It is recognized, therefore, that effective coordinated planning is essential to meeting the total needs of the patient and that this can best be accomplished through cooperative efforts of community organization and the various groups and agencies, both voluntary and official, interested in promoting better health care.

Point 2. Responsibility to Plan According to Need.

Each class of health facility providing health service of some type has the basic responsibility for a well-developed program to provide the highest quality of services possible in the most efficient and economical manner. In the case of a general hospital, there should be a soundly developed, long-range plan, based on a critical appraisal of the existing facility. This plan should reflect the community needs, its ability to support, and the plan projected into the foreseeable future.

Other types of facilities would, of course, be compelled to consider additional influencing factors, however, the net result of all planning when translated into reality, primarily must be directly toward patient needs.

Point 3. Community Planning Groups.

Sound planning at the community level is basically essential to a well-balanced community health program and to make an effective contribution to a coordinated planning program. Here lies the responsibility for all hospitals and related health facilities in a community to coordinate plans for all normal and specialty services and to discourage duplication of costly facilities and services, thus assuring the most effective use of community resources.

Point 4. Regional Planning Groups.

The primary purpose of a Regional Planning Group is to coordinate planning activities between community health programs and those conducted on an area or statewide basis. Conceivably, this group would be composed of selected membership from the several community hospital service areas.

At the present, there are nine regional areas designated in the Hill-Burton State Plan, each of which has, or is programmed to have, one or more general hospitals of at least 100-bed capacity. In addition, there is one base teaching area, making ten regions in all.

Actual delineation of an area constituting a planning group will depend largely upon the interest and response to this voluntary plan. However, it is hoped that each of these ten regions will ultimately become a Regional Planning Area.

With these planning groups will lie the responsibility for implementing the following objectives:*

1) Maintaining and improving quality of care as economically as possible.
2) Correcting deficiencies in existing facilities and services.
3) Stimulating the construction of needed facilities, including those for educational purposes.
4) Discouraging construction not conforming to community needs.
5) Assuring more effective use of com-

*Areawide Planning for Hospitals and Related Health Facilities. Joint Committee of the American Hospital Association and the Public Health Service, 1961.

munity funds by avoiding unnecessary duplication of highly specialized, infrequently-used, expensive facilities.

6) Improving patient care by developing more effective interrelationship among facilities.

7) Developing an orderly distribution of all facilities in keeping with the projected population characteristics and overall community development.

8) Encouraging individual facilities to define and carry out their objectives and projected roles in relation to other facilities, services and community needs.

9) Stimulating facilities to recognize opportunities for better coordination of services.

10) Demonstrating the need for philanthropic and public funds through a well-developed information program.

Point 5. Cooperation Between Regional Planning Groups and the State Agency.

Insofar as it affects the Hill-Burton program in Oklahoma, and to the extent that non-participating facilities will be encouraged to take an active interest in a Coordinated Planning Program, the State Hospital Advisory Council and the State Agency are pleased to announce that beginning with the fiscal year 1963, prior consideration will be given to the recommendations of an approved, properly organized and active Regional Planning Group, thereafter known as a Regional Planning Council, on all applications for Hill-Burton assistance from sponsors within the respective region.

Final determination on project details, exact priorities and other eligibility factors of the Hill-Burton program will rest with the project sponsor and State Agency, following initial action of the Regional Planning Council and the State Hospital Advisory Council.

It should be recognized that the State Agency or the Hospital Advisory Council cannot delegate their statutory obligations. However, every effort will be made to collaborate with Regional Planning Councils and to take whatever steps are necessary to promote and to encourage sound planning methods at both the community and regional levels.

ORGANIZATION OF PLANNING GROUPS

This then, is the basic plan. How well it succeeds, or indeed, if it even materializes to any degree, depends primarily upon the reaction of the general hospital field. While its implementation should not be the sole responsibility of the general hospitals, it is quite obvious that this group will have to assume leadership and to take the initiative in conveying to the communities both the need and benefits of cooperative planning. Without this stimulus, there is a possibility that the planning groups may be improperly organized, and more important, planning activities may proceed without the valued assistance and guidance of the general hospitals.

COMMUNITY PLANNING GROUP

Success of a coordinated plan is dependent upon the composition of a good planning organization at the community level. If there is an existing hospital, or hospitals, naturally, such facilities should be represented by the administrator and governing board. Organization may be expected to vary considerably from community to community, however, a well-balanced, continuing planning body representing a general cross section of community interests cannot be too strongly emphasized. Membership should be drawn from the leaders of such groups as hospital organizations, medical societies, planning commissions, the health department and other occupational, professional and industrial groups sharing a common interest in health problems. In some instances, there may be specialized health service groups represented locally, or perhaps a member of a statewide organization. Whatever the size, character and interests of the community may be, exceedingly judicious thought should be given to a balanced membership which could examine the problems objectively, promote public acceptance and support and to actively implement a sound plan that is consistent with the community's needs and abilities.

Likewise, the actual membership will vary just as the composition varies. It is recommended, however, that regardless of size, the hospital field itself should not be predomi-

nant as it may have a tendency to deter active participation of the non-hospital membership. In some instances, as may be the case in metropolitan areas, it may be advisable to limit the planning group to a governing board and to provide for appropriate technical assistance from advisory committees, specialists or consultants. Still, in other instances, it may be expedient, and perhaps necessary, to align health planning with other organized community planning groups, i.e., Area Redevelopment for Urban Renewal programs.

It is quite apparent, therefore, that local planning groups can vary considerably both as to composition and membership even though the objectives have a common direction of purpose.

REGIONAL PLANNING GROUPS

As defined earlier, the purpose of a Regional Planning Council is to coordinate planning activities between community health programs and those conducted on an area or statewide basis. Each of the ten designated regions is composed of several hospital service areas which has, or hopes to have one or more health facilities which would indicate the need for establishing a local planning group.

To assure the maximum of efficiency and effectiveness of purpose, it would appear that the Regional Planning Council should be composed of representatives of the component community groups. As in the case of the latter, extreme diligence should be exercised to maintain a balance of lay and professional membership in order to assure visionary, forthright and uninhibited liaison between the various communities and the State Agency.

SUMMARY

On initial impact, the foregoing plan may seem to be an overly ambitious, far-reaching concept representing a tremendous undertaking and involving the time, efforts and talents of many people. However, when one considers the magnitude of the cost of health care, the increasing demands for adequate care, the capital investment and expenditures of our facilities, and their effects upon the social and economic structure of our society, the need for bringing all these facets into a common perspective can hardly be denied. Let us hope, at least, that Coordinated Planning is a step in the right direction. □

3400 N. Eastern, Oklahoma City, Oklahoma

NATIONAL BILIRUBIN SURVEY

In order to stimulate interest in the accuracy of Bilirubin determinations the College of American Pathologists Standards Committee announces a National Bilirubin Survey, available to all physicians and hospitals.

Accurate Bilirubin measurements are of great importance in decisions as to the need for exchange transfusion in newborn erythroblastosis fetalis. They are of great importance in the differential diagnosis of the various icteric syndromes in patients of all ages. They are important in evaluating prospective blood donors. In all of these cases, a poorly calibrated technique will lead to serious mistakes in the care of the patient.

Bilirubin measurements must be consistent from year to year so that treatment is based upon the same criteria in successive patients. Therefore, reliable Bilirubin standards should be utilized with stable photoelectric photometers.

Participants will first receive a set of survey samples. Following the survey, a critique of Bilirubin Standards and methods of analyses will be provided. Questions arising during the survey may be directed to the Committee.

Those who wish to participate in this Bilirubin survey may do so by sending $8.00 to the Standards Committee, College of American Pathologists, Prudential Plaza, Chicago 1, Illinois. Applications must be received not later than August 1, 1962.

in 1948
unique therapeutic achievement

in 1962
universal therapeutic acceptance

Dramamine® in vertigo

brand of dimenhydrinate

world standard for control of vertigo, nausea and emesis associated with

■ Motion Sickness ■ Postoperative States ■ Labyrinthitis ■ Hypertension ■ Radiation Sickness ■ Ménière's Syndrome ■ Postfenestration Syndrome ■ Antibiotic Therapy ■ Migraine Headache ■ Pregnancy ■ Narcotization ■ Electroshock Therapy

Tablets/Liquid/Ampuls (for I. M. or I. V. use)/Supposicones®

SEARLE

Research in the Service of Medicine

Anemic Heart Disease

THOMAS N. LYNN, M.D.*

The heart in severe chronic anemia is operating under an increased burden, for not only is the cardiac output increased, but the heart is required to do this extra work while being nourished by blood which has a decreased oxygen transporting capacity. In general the degree of increase in the cardiac output is proportional to the severity of the anemia. Above nine grams per cent hemoglobin, there is rarely an increased output attributable to anemia, however at hemogloblin levels of five grams per cent and below, the output may be doubled.

Congestive heart failure and angina pectoris may be the result of chronic anemia alone when the hemoglobin level is below five grams per cent. A milder anemia may be the precipitating cause of decompensation or anginal pain when other cardiac pathology such as arteriosclerotic or rheumatic heart disease is present.

Cardiac murmurs may be associated with chronic anemia; again, the lower the hemoglobin level, the more likely are murmurs to be present, rarely occurring however, above nine grams per cent. Such murmurs develop because of three inter-related factors; the hyperdynamic state of the circulation, the dilatation of heart chambers and the presence of a decreased blood viscosity. The hyperdynamic circulation produces murmurs in the same manner as does thyrotoxicosis, another hyperdynamic circulatory state. A high blood flow going across a normal valve orifice sets up eddy currents which cause the heart wall to vibrate and this vibration is what we hear as a murmur. These eddy currents are more likely to occur when a heart chamber is dilated as is frequently the case in severe anemia, and eddy currents are more easily formed in a less viscous liquid such as anemic blood.

These murmurs are characteristically systolic in time and heard along the left sternal border, but may mimic the mururs of mitral regurgitation and occasionally the diastolic murmur of mitral stenosis. It can thus be appreciated that seldom is it wise to advance an anatomic cardiac diagnosis in the presence of severe anemia.

Etiologically, the most frequent causes of chronic anemias severe enough to produce heart disease are vitamin B-12 deficiency (pernicious anemia), chronic (and often unappreciated) bleeding from the gastro-intestinal tract, malabsorbtion states, and occasionally uremia. Worthy of special note is sickle cell anemia which because of the associated joint symptoms is often difficult to distinguish from acute rheumatic fever.

The treatment of anemic heart disease is the correction of the anemia. This however, must be done with caution when transfusion is being used because of the hazard of acutely "overloading" the circulation with resulting pulmonary edema. When transfusion is indicated, the use of packed red cells and frequent monitoring of the venous pressure reduces the hazard of blood replacement. □

* * *

Editor's Note: Available through the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma, is a booklet entitled "Publications and Visual Aids for Physicians." This booklet contains a list and description of literature and films that are available to physicians and, on prescription, to their patients through the Heart Association.

*Assistant Professor, Department of Preventive Medicine and Public Health, Instructor, Department of Medicine, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

Dean's Message

It has been necessary because of increasing loads to limit to a slight degree the admission of patients for obstetrical delivery at University Hospital by deferring admission of uncomplicated cases who have not received antepartal care in the Women's Clinic or allied community antepartum clinics. Complicated cases, or those requiring special care, are admitted without delay.

This minor change in policy is necessitated by the limited facilities and the teaching needs of the Department of Gynecology and Obstetrics. The ratio of volume to facilities and staff has been sufficiently great to interfere with the chief purposes of a university teaching hospital—that is, to provide appropriate clinical material for education of undergraduate and post-doctoral students and for research, and to offer a high quality of professional care. Since the facilities and staff could not be expanded immediately, it was important to restrict cases of poor teaching value, and make an effort to increase the load of potential teaching cases, i.e., complications. A sincere effort has been made to encourage emphasis on thorough study and evaluation of obstetrical patients. This is difficult to accomplish when service responsibility is overburdening. Moreover, it is necessary to divide equitably the volume of patients between the obstetrical and gynecologic sections of the service.

A measure of patient education is implicit in such policy. By restricting admission of "unregistered" patients, it was hoped that the vital importance of antepartal care would be impressed upon patients and referring physicians. That this desirable effect is being achieved is apparent in an increased registration in the Women's Clinic.

An important reason for the slight limitation of patient admissions was a growing overcrowding of the obstetrical unit and nursery, which at times has resulted in an unfortunately high hospital infection rate.

When the hospital facilities and staff enlarge, it certainly will be possible, and highly desirable, to increase the load of obstetrical patients, while maintaining the appropriate emphasis upon selection of cases of teaching potential and the responsibility to provide the state with a referral center for the problem cases requiring special skills and facilities. □

Mark R Everett

Magnesium Depletion Induced by Various Diuretics*

WILLIAM O. SMITH, M.D.
ADRIAN A. KYRIAKOPOULOS, M.D.
JAMES F. HAMMARSTEN, M.D.

THESE STUDIES were prompted by the observation of symptomatic magnesium deficiency in two patients which followed intensive therapy with diuretic agents.

Case 1

F.E.S., a 69-year-old male patient with Laennec's cirrhosis was admitted to the hospital because of marked edema and ascites. He was treated with meralluride (Mercuhydrin), 2 ml. daily for two days, chlorothiazide (Diuril) 1500 mg. daily for the next five days and chlorothiazide 1000 mg. daily for the following 35 days. During this period a 15 kg. weight loss was achieved. However, on the 33rd hospital day he was found to be intermittently confused and had hyperactive reflexes and an athetoid tremor. Laboratory studies revealed a serum magnesium of 1.05 mEq./L. (The normal range for our laboratory is 1.54 to 2.06 mEq./L.) A second serum magnesium was 1.03 mEq./L. Other serum electrolytes were normal. The administration of magnesium sulfate (8 Gms. daily intramuscularly) was associated with the disappearance of these symptoms in 24 hours despite the continuation of chlorothiazide for several more days.

Case 2

E.B., a 47-year-old male patient with cor pulmonale, was admitted to the hospital with confusion, hyperactive reflexes and an athetoid tremor. He had been treated for marked edema prior to admission with meralluride, 2 ml. daily and large doses of ammonium chloride for at least two weeks, and had diuresed to the stage of "dry weight." The serum sodium was determined to be 122 mEq./L and the serum magnesium 1.17 mEq./L. Intravenous hypertonic saline had no effect on the patient's symptoms, but the administration of magnesium sulfate intramuscularly resulted in a rise of serum magnesium to 2.22 mEq./L and a clearing of the symptoms.

Urinary magnesium excretion was determined daily on a third patient who had massive edema. He was treated with intramuscular injections of meralluride (figure 1) and marked increases in urinary magnesium excretion were noted after each injection of the diuretic.

A systematic, controlled study of urinary magnesium excretion was therefore carried out on a group of subjects receiving either a placebo or one of several diuretics.

*From the Medical Service, Oklahoma City VA Hospital and the Department of Medicine, University of Oklahoma School of Medicine.
This study was supported in part by Grant No. H-3521, National Institutes of Health, Bethesda, Maryland.
Presented in part at the Southern Section Meeting of the American Federation for Clinical Research, New Orleans, Louisiana, January, 1959.

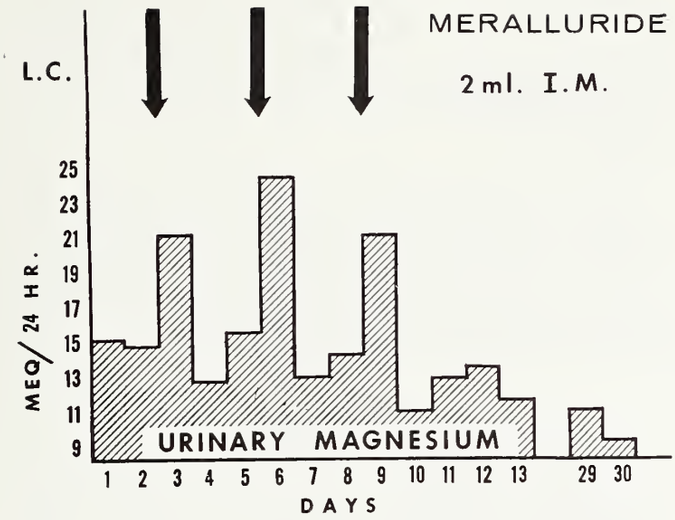


Figure 1. Daily urinary magnesium excretion in a markedly edematous patient. Note the pronounced increase in urinary magnesium accompanying each injection of meralluride.

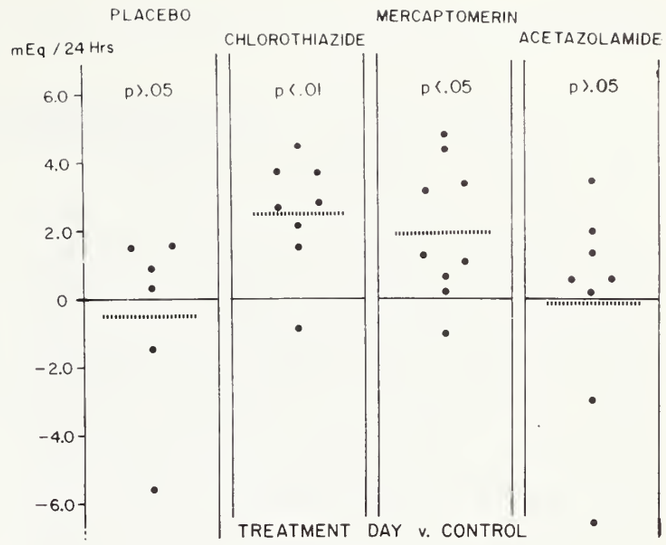


Figure 2. The change from control in 24 hr. urinary magnesium is plotted for each subject. The horizontal broken line indicates the mean value.

MATERIAL AND METHODS

Thirty-one non-edematous subjects free of cardiovascular, renal, hepatic and endocrine disease were studied. The subjects were placed on a constant diet and fluid intake providing 2,000 calories, 3.2 grams of sodium, 4.0 grams of potassium and chloride, 300 milligrams of magnesium and 3,000 ml. of fluid daily. Twenty-four hour urines were collected and measured for volume and electrolyte content, including magnesium. Magnesium was determined by spectrophotometric titration with EDTA.[1] Following a two-day control period the subjects were given either a placebo, mercaptomerin, (Thiomerin), chlorothiazide, or acetazolamide (Diamox) for two days and the urinary excretion of magnesium was compared to that of the control period.

RESULTS

Placebo Six subjects received a placebo. No significant change was observed in urinary magnesium excretion (figure 2) when compared to the control period.

Mercaptomerin Nine subjects were given mercaptomerin in a dosage of 2 ml. intramuscularly. A mean increase in urinary magnesium of 2.0 mEq./24 hr., a 30 per cent increase above control, was noted ($P<.05$). An increase was noted in eight of the nine patients, ranging up to +4.0 mEq./24 hr.

Chlorothiazide Eight subjects received chlorothiazide in a dosage of 1500 mg. daily. A mean increase in urinary magnesium of 2.4 mEq./24 hrs. resulted, a 33 per cent increase above control ($P<.01$). An increase was noted in seven of the eight subjects, ranging up to +4.4 mEq./24 hr.

Acetazolamide Eight subjects received acetazolamide in a dosage of 750 mg. daily. No significant mean change was noted in urinary magnesium excretion. Some of the patients manifested an increase in urinary magnesium while others showed a pronounced decrease.

DISCUSSION

Martin, Mehl and Wertman reported an increased urinary magnesium excretion in ten patients with congestive heart failure given meralluride, but the data were not presented.[2] Using acute clearance techniques in normal humans, Barker, Elkinton and Clark reported a pronounced increase in urinary magnesium following administration of meralluride and mersalyl and a slight decrease following acetazolamide.[3] Robinson, Murdough and Peschel have reported a seven-fold increase in the urinary excretion of magnesium induced by chlorothiazide.[4]

Our findings indicate a significant increase in urinary magnesium excretion induced by mercaptomerin in doses of two ml. intramuscularly and by chlorothiazide in

doses of 1500 mg. daily. Acetazolamide, on the other hand, failed to produce any constant effect on magnesium excretion.

When one recalls that there are only about 800 milli-equivalents of available magnesium in the entire human body, it can be appreciated that the daily loss of only a few extra milli-equivalents in the urine can eventually result in a profound deficiency of this cation. Therefore, it is not surprising that the vigorous and continued use of certain diuretic agents in edematous patients—whose urinary losses will be much greater than normals—may produce the picture of magnesium want. The alcoholic patient presents an even greater risk in this regard since it has been shown that alcoholics are often already deficient in stores of body magnesium.[5, 6]

SUMMARY

The prolonged treatment of edema using meralluride or chlorothiazide may deplete the body stores of magnesium and produce a syndrome characterized by mental confusion, athetoid tremor and hyperactive reflexes.

The administration of mercaptomerin or chlorothiazide to non-edematous subjects will induce a significant rise in urinary magnesium excretion, but acetazolamide shows no predictable effect in this regard. □

REFERENCES

1. Zak, B., Hindman, W. M. and Fisher, M.: Spectrophotometric Titration of Serum Calcium and Magnesium, Am. J. Clin. Path. 26: 1081, 1956.
2. Martin, H. E., Mehl, J., and Wertman, M.: Clinical Studies of Magnesium Metabolism, M. Clin. North America 36: 1157, 1952.
3. Barker, E. S., Elkington, J. R., and Clark, J. K.: Studies of the Renal Excretion of Magnesium in Man, J. Clin. Invest. 38: 1733, 1959.
4. Robinson, R. R., Murdaugh, H. V., Jr., and Peschel, E.: Renal Excretion of Magnesium and the Renal Factors Responsible for Hypermagnesemia of Renal Disease, Clin. Res. 7: 162, 1959 (abstract).
5. McCollister, R., Flink, E. B., and Doe, R. P.: Magnesium Deficiency in Chronic Alcoholism, J. Lab. and Clin. Med. 50: 931, 1957 (abstract).
6. Smith, W. O., and Hammarsten, J. F.: Intracellular Magnesium in Delerium Tremens and Uremia, Am. J. M. Sc. 237: 413, 1959.

William O. Smith, M.D.
800 N.E. 13th, Oklahoma City, Oklahoma

ABSTRACTS

NON-ALCOHOLIC PORTAL CIRRHOSIS IN WOMEN

Although portal cirrhosis is generally thought of as a disease occurring in men, it is nonetheless also found in women, and based on a study of cases admitted to the University of Oklahoma Hospital over the last ten years, about one-half of such cases do not appear to be associated with an excessive alcoholic intake.*

A comparison of a group of women having alcoholic portal cirrhosis with a group having cryptogenic portal cirrhosis showed that the former were primarily from an urban environment, and because they had the usual symptoms, physical findings, and disorders in liver function tests, were correctly diagnosed on their first visit.

The non-alcoholic group on the other hand, tended to be older at the time they developed symptoms, and these were likely to be somewhat different. Abdominal pain was the most frequent complaint. Although ascites were usually present, other signs commonly associated with cirrhosis (palmar erythema, spider angiomata, etc.) were much less frequent, and these patients were often mistakenly thought to harbor an intra-abdominal neoplasm. An elevated blood pressure was present in the majority, but may have been the reflection of unrelated factors.

Both groups of patients had alterations in liver function tests indicating hepatocellular damage, but the non-alcoholic group were less likely to show depressed serum proteins.

(REVIEWER'S NOTE: The astute physician will find much food for thought in this short paper, and after reading it may be less likely to explain the ascites of his elderly female in-laws as being due to sipping on the sly. The frequency with which the clinical picture can mimic a neoplasm points out the need for tissue biopsy to obtain the correct diagnosis.)

*Portal Cirrhosis in Alcoholic and Non-Alcoholic Women. J. D. Welsh. American Journal of Digestive Disease 7: 84-92 (January) 1962.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Effect of Magnesium Depletion on Renal Function in the Rat. W. O. Smith, D. J. Baxter, A. Lindner, and H. E. Ginn. Journal of Laboratory and Clinical Medicine, **59:** 211, 1962.

Hallucinations in Sensory Deprivation and Sleep Deprivation. J. T. Shurley. Hallucinations. New York, Grune and Stratton, 1962, p. 87.

Cataract Development in Rats Fed Commercial Quercetin. Y. Nakagawa, M. R. Shetlar, and S. H. Wender. Proceedings of the Society for Experimental Biology and Medicine, **18:** 401, 1961.

Multiphasic Screening Program Including a Cardiovascular Survey in Carter County, Oklahoma. F. R. Brown. Southern Medical Journal, **54:** 1383, 1961.

Congenital Malformations (Editorial). H. D. Riley, Jr. American Practitioner **12:** 701, 1961.

INTERNSHIP APPOINTMENTS

In March, the fourth year medical students learned the results of the National Internship matching plan. Physicians, their home town, and their internship appointment are listed.

John Delbert Albright, Leedy, Oklahoma, Tripler Army Hospital, Honolulu, Hawaii; Rex Tippens Baggett, Oklahoma City, St. Johns Hospital, Tulsa, Oklahoma; Lawrence Elmer Bare, Tulsa, St. Anthony Hospital, Denver, Colorado; Ronald Stephen Barlow, Bartlesville, George Washington Hospital, Washington, D.C.; Richard Aloysius Baylor, Jr., Oklahoma City, Charity Hospital of Louisiana, New Orleans, Louisiana; George Nick Beckloff, Okeene, Mercy Hospital, Oklahoma City; Donald Raymond Bergman, Miami, Charity Hospital of Louisiana, New Orleans, Louisiana; Keith Irion Bernhardt, Omega, St. Anthony Hospital, Oklahoma City; Larry Loyd Biehler, Omega, St. Anthony Hospital, Oklahoma City; Jerry Ben Blankenship, Frederick, University of Texas Medical Branch Hospital, Galveston, Texas; Paul Goodwyn Boren, Oklahoma City, Methodist Hospital of Dallas, Dallas, Texas; Robert Gary Bottomley, Tulsa, University of West Virginia Hospital, Morgantown, West Virginia; Donald Clarence Burr, Pauls Valley, Brooke Army Hospital, San Antonio, Texas; Carl D. Camp, Cleo Springs, St. Johns Hospital, Tulsa; Robert Bruce Chatfield, Tulsa, Tripler Army Hospital, Honolulu, Hawaii; John Henry Close, Oklahoma City, Mercy Hospital, Oklahoma City; Myron Alfred Cordum, Davenport, Mercy Hospital, Oklahoma City; Bert Nelson Corley, Sallisaw, U. S. Public Health Service Hospital, Norfolk, Virginia; Jim Carroll Couch, Duncan, St. Johns Hospital, Tulsa; Don Wales Culwell, Norman, St. Johns Hospital, Tulsa; Ernest Robert Daffer, Wilson, St. Anthony Hospital, Oklahoma City;

Harold Dean Davidson, Hydro, Wesley Hospital, Oklahoma City; Paul Edward Donat, Shawnee, Veterans Administration Hospital, Oklahoma City; Jim Howard Earls, Shawnee, U. S. Naval Hospital, Oakland, California; Ronald Charles Elkins, Ponca City, Johns Hopkins Hospital, Baltimore, Maryland; Charles Caleb Elliott, Tulsa, St. Johns Hospital, Tulsa; James Felactu, Tulsa, St. Anthony Hospital, Oklahoma City; David Armstead Flesher, Oklahoma City, St. Anthony Hospital, Oklahoma City; James Herbert Garner, Jr., Stillwater, Iowa Methodist Hospital, Des Moines, Iowa; Philip Leo Grisham, Purcell, Swedish Hospital, Seattle, Washington; Jack Sims Harper, Frederick, Maricopa County Hospital, Phoenix, Arizona; Gilbert Earl Haslam, Jr., Anadarko, St. Johns Hospital, Tulsa; Larry Joe Hrdlicka, Eufaula, U. S. Public Health Service, Baltimore, Maryland; Dale Ray Hughes, Aline, King County Hospital, Seattle, Washington; Robert Earl Hunter, Oklahoma City, Wesley Hospital, Oklahoma City; Eric Ray Hurd, Claremore, St. Johns Hospital, Tulsa; Lee Andrew Ison, Shawnee, St. Anthony Hospital, Oklahoma City; George Robert Jay, Oklahoma City, St. Johns Hospital, Tulsa; Grady Lynn Jeter, Altus, University of Oklahoma Hospitals, Oklahoma City; Charles Dwayne Kelley, Clinton, St. Anthony Hospital, Oklahoma City; Kem Kelley, Elk City, Cincinnati General Hospital, Cincinnati, Ohio; Tommy Edward Kendall, Holdenville, Iowa Methodist Hospital, Des Moines, Iowa; William Ransom Kilgore, Jr., Idabel, Parkland Memorial Hospital, Dallas, Texas;

Everett Gordon King, Duncan, Tripler Army Hospital, Honolulu, Hawaii; Joseph Anthony Kopta, Tulsa, San Francisco Hospital, San Francisco, California; James Hoyt Little, Oklahoma City, Wesley Hospital, Oklahoma City; Max Paul Lorenz, Tulsa, Charity Hospital of Louisiana, New Orleans, Louisiana; Charles Lee McCarver, Wister, Maricopa County Hospital, Phoenix, Arizona; Mack Ira McClain, Oklahoma City, University of Texas Medical Branch Hospital, Galveston, Texas; Patrick Allen McKee, Tulsa, Duke Hospital, Durham, North Carolina; Harvey Ray Michael, Oklahoma City, St. Anthony Hospital, Oklahoma City;

medical center

James Vance Miller, Oklahoma City, Mercy Hospital, Oklahoma City; George Clifford Moore, Stillwater, Charity Hospital of Louisiana, New Orleans, Louisiana; Omar John Morgan, Tahlequah, Wesley Hospital, Oklahoma City; J. Scott Morrison, Prague, University of Kansas Medical Center, Kansas City, Kansas; Elaine Marilyn Neill, Enid, Wesley Hospital, Oklahoma City; Thomas Orville Nicklas, Oklahoma City, St. Anthony Hospital, Oklahoma City; Ervin Ronald Orr, Anadarko, Mercy Hospital, Oklahoma City; Herman Craig Pitts, Fairfax, St. Johns Hospital, Tulsa; Lenard Austin Poplin, Twin Oaks, St. Johns Hospital, Tulsa; Tony Gene Puckett, Carnegie, Mercy Hospital, Oklahoma City; Hansel Lavern Ratliff, Red Rock, Hillcrest Medical Center, Tulsa; Jerry Dan Razook, Cherokee, Parkland Memorial Hospital, Dallas, Texas; James Stafford Reed, Tulsa, University of Oklahoma Hospitals, Oklahoma City; Donald Albert Reid, Oklahoma City, U. S. A. F. Hospital, Lackland Air Force Base, San Antonio, Texas; John Howard Rempel, Enid, Kansas City General Hospital, Kansas City, Missouri; Freddie Albert Reynolds, Ponca City, U. S. Public Health Service, New Orleans, Louisiana;

Joe Bills Reynolds, Gotebo, St. Anthony Hospital, Oklahoma City; David Gerald Rogers, Oklahoma City, St. Anthony Hospital, Oklahoma City; Kenneth Rex Scivally, Hollis, St. Anthony Hospital, Oklahoma City; Eddie Benson Scoggin, Altus, Maricopa County Hospital, Phoenix, Arizona; Richard Dean Scott, Tulsa, Jackson Memorial Hospital, Miami, Florida; Ramon Arthur Shane, Henryetta, University of Oklahoma Hospitals, Oklahoma City; David Albert Smith, Stroud, U. S. Naval Hospital, Camp Pendleton, California; Henry Kirven Speed III, Sayre, University of Oklahoma Hospitals, Oklahoma City; Norman Russell Stacey, Jr., Woodward, Mercy Hospital, Oklahoma City; Danny Lee Stehr, Clinton, Wesley Hospital, Oklahoma City; Dan Thomas Sullivan, Okmulgee, St. Johns Hospital, Tulsa; James Robert Taylor, Stillwater, St. Anthony Hospital, Oklahoma City; Larry Raymond Taylor, Carnegie, St. Francis Hospital, Honolulu, Hawaii; Humphrey Colbert Townsley, Oklahoma City, St. Johns Hospital, Tulsa; Lanny Floyd Trotter, Oklahoma City, Wesley Hospital, Oklahoma City; Michael Howard Whalen, Oklahoma City, University of Oklahoma Hospitals, Oklahoma City; Travis Edward White, Altus, University of West Virginia Hospitals, Morgantown, West Virginia; Boyd Otho Whitlock, Kaw, Wesley Hospital, Oklahoma City; and Thomas Leroy Whitsett, Tulsa, Veterans Administration Hospital, Oklahoma City.

AOA Spring Lecture Held

Two faculty members and 13 students were initiated into Alpha Omega Alpha, honorary medical fraternity, this spring at the University of Oklahoma School of Medicine.

Carleton Chapman, M.D., professor of medicine at Southwestern Medical School of the University of Texas, Dallas, spoke at the initiation banquet and gave the annual AOA spring lecture for the student body and faculty.

New members are: John A. Schilling, M.D., professor and head of the Department of Surgery; Mark Allen Everett, M.D., assistant professor of dermatology; Richard T. Coussons, Houston, Texas, William J. Preston, Norman, and Michael Keeran, Lawton, all junior students;

Ronald C. Elkins, Ponca City, Patrick A. McKee and Joseph A. Kopta, Tulsa, John D. Albright, Leedey, George N. Beckloff, Okeene, David A. Flesher, Edmond, Jerry Blankenship, Frederick, Ramon A. Shane, Henryetta, and Rex Baggett and James H. Little, Oklahoma City, all senior students.

CLIMAX ON KING-ANDERSON BILL

"Smoke and fire were on the sea, everywhere around was the enemy . . . the PT 109 was gone, but Kennedy and his crew live on.

" . . . Oh, it's hard to get the best of a man named John."

The PT 109
Columbia Records

Taking the measure of J.F.K. has now fallen the lot of millions of Americans who are anxious to preserve freedom in health care.

Faced with the formidable threat of a determined President who has aligned himself with the powerful forces of organized labor and other liberal groups and individuals, American medicine leads the conservative brigade as it braces for a gigantic showdown on the social security health bill, H.R. 4222.

In the heated debate which has erupted over H.R. 4222 in recent weeks, one man has emerged as the most eloquent spokesman for the conservative viewpoint. He is Edward R. Annis, M.D., practicing surgeon from Miami, Florida, and chairman of the AMA's Speakers Bureau.

The silver-tongued Annis, AMA President Leonard W. Larson, M.D., and conservatives in and out of Congress have been successfully trading headline-making punches with Administration and labor forces as the politically inspired legislative proposal reaches the crescendo of its promotion.

The medical profession and its many allies have not wilted in the heat being generated from the White House, campaign headquarters of a coast to coast conspiracy to hoodwink the American people into regimenting health care for 14 million social security beneficiaries; a scheme designed to create the framework for complete governmental takeover of the nation's health care system in the years ahead.

Instead of shying from the devastating onslaught as hopefully expected by the left-leaning professional politicians, physicians and their supporters have reacted with increased vigor. From the AMA to the smallest county medical society, doctors are making themselves heard.

A Spectacular Flop

Highlighting the events leading up to the impending showdown on H.R. 4222 was Kennedy's May 20th Madison Square Garden Rally, where he addressed a capacity crowd of elder citizens, brought to the meeting by the National Council of Senior Citizens for Health Care Through Social Security.

The mysteriously financed organization, which is being managed by a White House Staff, used Kennedy as propaganda agent for the nationwide TV-radio spectacular.

His address was not only carried without charge on national television and radio networks, but was also beamed on closed circuit television to some thirty rallies held by Administration officials across the land. It was a precedent-setting power play of a magnitude never employed by the Chief executive of the United States.

Although Kennedy had hoped to demonstrate "spontaneous and overwhelming" support for the King-Anderson bill, the rallies fell short of their expected goals, and the spectacular production backfired in the form of increased opposition to the measure.

Rallies scheduled for Denver, Philadelphia, Dallas, San Francisco, Louisville, Atlanta and Birmingham were cancelled due to lack of interest. In Charleston, West Virginia, only 46 persons occupied a 3,500 seat auditorium. Similar turnouts were seen in St. Louis, San Diego and Cincinnati.

Act II: Enter AMA

On May 21st, the AMA replied to The President's extravaganza, by staging a nationwide television address by Doctor Annis in the vast emptiness of Madison Square Garden. The purchased-time event, filmed before the clean up crews cleared the hall of Kennedy's balloons and ticker tape, had a twofold purpose: To present factual information on the King-Anderson bill, and to

demonstrate the lonesome helplessness of the American people in standing up to the power of a domineering government.

AMA's unique presentation hit its public relations mark, and almost everyone agreed that the television battle was won by the underdog in the second round. In four days following the broadcast, the AMA received 24,000 letters, more than 95 per cent of which were favorable.

Other headlined exchanges arising out of the controversy include the AMA's charges that Secretary of HEW Ribicoff has violated Federal law in spending tax funds to promote H.R. 4222 (denied or ignored by Administration officials), and Kennedy's accusation that the AMA has always opposed the Social Security Act (denied and factually substantiated by the AMA).

Up to Congress

Despite the noise being made by those outside the legislative ranks of Congress, most Senators and Representatives have remained quiet on the issue, as if they wish it would go away. Although the facts deny the advisability and need for H.R. 4222, many politicians are viewing it from its political expediency or political suicide potentialities.

The lawmakers who have had the courage to speak out against the bill need large-volume write-in support for the positions they have taken. Those publicly favoring the bill need their politically-motivated enthusiasm dampened, and those on the fence need public support to bolster the courage of their consciences.

The fate of H.R. 4222 is a serious matter—demanding the complete attention of every physician's family and their friends. It will be passed, defeated or sidestepped by Congress within the next few weeks. □

'New Look' Annual Meeting Success

A face-lifted annual meeting was presented to more than 700 association members in Oklahoma City on May 5-7, and most went away with the feeling they had experienced one of the best conferences in OSMA history.

Designed to bolster sagging enthusiasm for the annual outing, the 1962 event hit its mark with a diversified array of guest speakers and subjects, featuring special-interest programs and a three-ring-circus presentation of simultaneous scientific and socio-economic meeting sessions.

More than forty speakers provided listeners with a varied program ranging from "Estate Planning" to "Hyperbilirubinemia" to "Americanism."

The meeting was staged in the comfortable and convenient facilities of Oklahoma City's Skirvin Hotels. Another innovation, previously tested at the 1961 meeting in Tulsa, was scheduling the first two days of the meeting on a weekend, in an effort to avoid conflict with physicians' office hours.

Scientific activities began on Saturday afternoon, May 5th and continued through Monday, May 7th. The OSMA's Board of Trustees met Friday afternoon and evening, and the House of Delegates convened at 10:00 a.m. Saturday morning for what turned out to be a twelve hour session.

Inauguration of President J. Hoyle Carlock, M.D., Ardmore, was held Monday night during the ever-popular President's Inaugural Dinner-Dance. Also apearing on the Monday evening program was Senator Robert S. Kerr, who addressed physicians and wives on the King-Anderson Bill, then discussed the government's space exploration program. Entertainment was provided by the delightful dance music of the Billy May Band.

Other related events included the annual meeting of the Woman's Auxiliary, a variety of specialty society meetings, a luncheon-seminar on Americanism, a special program presented by the American College of Chest Physicians, and the annual golf tournament.

Complete proceedings of the House of Delegates meeting will appear in the July issue of the *Journal.*

New Officers

New officers elected during the House of Delegates meeting were: Peter E. Russo, M.D., Oklahoma City, President-Elect; Frances P. Newlin, M.D., Shawnee, Vice-President; and Francis Davis, M.D., Shawnee, Alternate Delegate to the American Medical Association.

Re-elected were: Mark R. Johnson, M.D., Oklahoma City, Secretary-Treasurer; Wilkie D. Hoover, M.D., Tulsa, Delegate to the AMA; Marshall O. Hart, M.D., Tulsa, Speaker of the House; and, C. M. Hodgson, M.D., Kingfisher, Vice-Speaker.

The Service Contract

Although there were less fireworks than predicted, the AMA-approved Blue Shield service contract for the elderly nevertheless was soundly trounced. Three resolutions were introduced by county societies in opposition to the plan, with particular reference to its service contract provisions, and three additional resolutions attacked the relative value fee determination system, which may be interpreted as indirect criticism of the Blue Shield proposal (the delegates previously *approved* the relative value scheduled in 1961).

After lengthy debate in the reference committee, the delegates retured to the closing session of the House of Delegates and rather quietly rejected participation in the national Blue Shield plan on a service contract basis, recommending instead that an indemnity contract be worked out. (Oklahoma Blue Shield's "Special 60" indemnity program for the elderly has been in operation since 1959, initiated at the request of the OSMA.)

The controversial proposal erupted on January 18th, when the AMA's Board of Trustees and the National Association of Blue Shield Plans jointly announced that a uniform, nationwide program of surgical and medical care benefits for all persons over age 65 would soon be available.

The plan was to provide in-patient care on the basis of 70 days per admission, and for professional calls to nursing home patients who were moved to such institutions following discharge from a general hospital. Subscribers with annual incomes below $2500 (single person) and $4000 (couple) were to get paid-in-full benefits under their policies, while those with incomes above the maximums would be subject to additional charges from the physician.

Premiums for the Blue Shield plan were set at $3.20 per month for a single subscriber and $6.10 for a couple.

Many physicians from Oklahoma and other "indemnity" states immediately questioned the authority of the AMA Board of Trustees to publicly commit the profession to a service contract. In justification, the AMA Board cited a 1958 action of the AMA House of Delegates, which recommended that physicians "expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income" and that "physicians agree to accept a level of compensation for medical services rendered to this group which will permit the development of such insurance and prepayment plans at a reduced premium rate."

When the AMA delegates approved the 1958 recommendation, Oklahoma's House of Delegates turned it down on a service contract basis, but requested Oklahoma Blue Shield to develop the "Special 60" indemnity program.

Other Business Actions

In other actions, the House of Delegates:

• Asked the State Legislative Committee to seek legislation which would finance adequately the new Medical Examiners Law.

• Endorsed the incorporation of the Youth Physical Fitness program into the educational system, but with emphasis on local design and control.

• Recommended a public education program to acquaint industry, government and the general public with the merit of the principle of free choice of physician.

• Instructed the Federal Legislative Committee of the OSMA to organize and develop an annual group tour to the nation's capitol for the purpose of improving rapport with Oklahoma congressmen and senators.

• Approved an increase in the licensure renewal fee (up to $10 per year) to offset increased operational costs of the State Board of Medical Examiners.

• Reaffirmed opposition to the King-Anderson Bill and stated that the OSMA will not be a "willing party to implementing any system which we believe to be detrimental to the public welfare." (Delegates avoided the plight of the New Jersey doctors, by emphasizing that professional services would be available to all, regardless of ability to pay.)

• Officially endorsed the Oklahoma Medical Political Action Committee and its national counterpart, the American Medical Political Action Committee, recommending to all OSMA members that they become active dues-paying members of both citizenship groups.

• Opposed compulsory retirement at an arbitrary age, and recommended an educational campaign on this subject. Delegates said retirement should be on an individual basis, with due respect for the physical and mental condition of the employee.

• Endorsed widespread use of automobile seat belts and asked physicians to prescribe them for their patients.

• Recommended a continuing public education program on the value of immunization; endorsed oral polio vaccine and recommended its use

(Continued on Page 256)

MEET THE PRESIDENTS

J. HOYLE CARLOCK, M.D.
Ardmore
President

PETER E. RUSSO, M.D.
Oklahoma City
President-Elect

Installed as President of the Oklahoma State Medical Association on May 7th, J. Hoyle Carlock, M.D., steps into the position with an extensive background in association affairs.

An Ardmore native, Doctor Carlock received his bachelor's degree from the University of Oklahoma in 1931. He graduated from the Tulane School of Medicine in 1935, where he belonged to the Nu Sigma Nu medical fraternity and Alpha Omega Alpha scholastic fraternity.

Postgraduate study followed at New Orleans, Cincinnati, Temple, Texas, Dublin, Ireland and Vienna, Austria.

Doctor Carlock served five years in the Army Medical Corps during World War II, where he achieved the rank of Lieutenant Colonel. Foreign service was seen with the 3rd Army in Europe.

In addition to professional society memberships, he has been a member of the Ardmore School Board for more than ten years, and has served as a director of the State School Boards Association, the Exchange National Bank, Ardmore, the Oklahoma Development Council, and the Ardmore Chamber of Commerce.

Recently, he was named to serve on a national panel of advisors to Abraham Ribicoff, Secretary of Health, Education and Welfare, Washington, D.C. The panel makes recommendations to Ribicoff on policy matters regarding programs in the field of aging.

He is a former vice-president, vice-speaker and trustee of the OSMA. The Carlocks have three children.

Peter E. Russo, M.D., was named by the association to succeed Doctor Carlock next May. Again, the OSMA has chosen a well-qualified leader.

Moving from Cleveland, Ohio, to Oklahoma City in 1941, Doctor Russo undertook residency training at University Hospitals and remained to establish a private practice in radiology.

His bachelor's degree is from Western Reserve University in 1926, and he completed medical education at St. Louis University School of Medicine, where he received his degree in 1930. He was a general practitioner for ten years prior to his specialty training.

Doctor Russo has held many teaching appointments at the University of Oklahoma School of Medicine, including the chairmanship of the Department of Radiology from 1949-1957. At present, he is Professor of Radiology at the school.

Among his professional society affiliations are: American Board of Radiology; American College of Radiology; Radiological Society of North America (vice-president — 1956); Rocky Mountain Radiological Society (president—1960-61); American Roentgen Ray Society; Oklahoma State Radiological Society (president—1948-49); American Society of Nuclear Medicine (president — southwestern chapter—1959-60).

The new president-elect was vice-president of the OSMA last year and has a long history of service to the association. Doctor and Mrs. Russo have four children.

Past-Presidents Honored at Annual Breakfast

Fourteen Past-Presidents of the OSMA attended the annual breakfast held in their honor May 7 at the Oklahoma Medical Research Foundation. They were: (left to right) Louis H. Ritzhaupt, M.D., Guthrie; Ralph A. McGill, M.D., Tulsa; E. C. Mohler, M.D., Ponca City; John F. Burton, M.D., Oklahoma City; Everett S. Lain, M.D., Oklahoma City; P. P. Nesbitt, M.D., Tulsa; Sam A. McKeel, M.D., Ada; Henry H. Turner, M.D., Oklahoma City; John E. MacDonald, M.D., Tulsa; George H. Garrison, M.D., Oklahoma City; R. Q. Goodwin, M.D., Oklahoma City; T. H. McCarley, M.D., McAlester; Henry K. Speed, M.D., Sayre; Clinton Gallaher, M.D., Shawnee and J. Hoyle Carlock, M.D., Ardmore. who was installed as President of OSMA on Monday evening.

(Continued from Page 255)

in community-wide immunization programs.

- Approved toughening the Medical Practice Act to the extent that a second conviction of practicing medicine without a license would be a felony, punishable by fine of not less than $1,000, or one year in prison, or both.
- Asked the Public Welfare Committee of the OSMA to renegotiate the fee schedule with the Department of Public Welfare.
- Questioned and opposed the infringement of Government Employment Services into the medical and paramedical fields as an unnecessary misuse of public funds in direct competition with private enterprise.
- Amended the Constitution and Bylaws: To change the name of the Council to the Board of Trustees; To create five Councils for the purpose of coordinating the work of association committees; To establish a two-day format for the annual meeting of the House of Delegates; To make it possible to nominate officers in the closing session of the House of Delegates meeting.
- Voted to continue the regional postgraduate education programs, and approved the production of twelve programs to be aired next year over Oklahoma's educational television stations.
- Supported a report from the Financial Aid to Education Committee in which a detailed operational plan for the OSMA's loan, grant-in-aid and scholarship programs was presented. In brief, the funds for the activity are to be managed by the Business Administrator of the OU Medical Center, but all policy matters and authority for disbursement of funds are to be retained by the OSMA Committee, with annual review by the House of Delegates. □

Carnegie Needs GP

Carnegie, located 85 miles southwest of Oklahoma City, is looking for a general practitioner. Centered in a good agricultural and cattle country, Carnegie has a population of 2,500 with a tri-county trade area of 15,000. Good schools, diversified civic activities, nine churches, new housing projects, and water sports within ten miles are all features offered in this southwest Oklahoma town. Office and clinic space is available within one block of twenty-bed, air-conditioned hospital. Interested physicians should contact Robert M. Johnson, President, Farmers National Bank, Carnegie, Oklahoma.

ADMISSION BY PHYSICIAN ONLY

A Distinctive Atmosphere in A Setting of Elegance

Irene's Nursing Home

THE HALLMARK OF EXCELLENCE IN CHRONIC and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City

CE 2-8091 CE 2-7853

AMA Scientific Session To Review Problems Of Teenagers

Problems of today's teenagers, threatened by domestic and social forces and swept along on a treadmill of fads, gangs, school spirit, keeping-up-with-the-Jonses, and fear of social criticism, will be discussed during a full-day's scientific session at the American Medical Association's convention in June.

The physical aspects of puberty and adolescence, teenage problems in boys and girls and the social influences on adolescent behavior will be covered by a panel of experts on Thursday morning, June 28.

Subjects to be discussed at the afternoon session include the teenager and physical fitness, teenager skin problems, teenager orthopedic problems, gynecologic problems in teenagers and the psychiatric implications of the teenagers' problems.

More than 15,000 physicians are expected to attend the AMA five-day meeting which will be held at Chicago's McCormick Place, June 24-28.

The teenager program will be sponsored by the AMA Section of Pediatrics in conjunction with five other sections — physical medicine, dermatology, orthopedics, obstetrics and gynecology, and nervous and mental diseases.

The secretary of the Section on Pediatrics is Doctor James L. Dennis, of Oakland, California.

Program participants for the joint session on teenage problems include: Doctors Harry Bakwin, New York, who will serve as moderator; Donald J. Erickson, Rochester, Minnesota; Marion Sulzberger, New York; Robert Joplin, Brookline, Massachusetts; James C. Walsh, Washington, D.C.; James G. Delano, Rochester, Minnesota; Barbara M. Korsch, Los Angeles and Ralph D. Rabinovitch, Northville, Michigan.

Another panelist will be Henry D. McKay, head of the Department of Sociology, Institute for Juvenile Research, Chicago.

In discussing the Thursday program, Doctor Dennis stated that the participants will attempt to clarify for the benefit of their physician audience the perplexing maze of contradictory advice on the "best" methods of child training.

To the average unsure young parents, determined to give their child the training that is "best," the raging torrent of advice from countless sources has brought increasing bewilderment, Doctor Dennis said, adding: "Among anxious fathers and mothers, the fear that even the most innocent appearing act or carelessly spoken word may 'harm' the child or 'damage' his future happiness has become a mass phobia."

As an example, Doctor Dennis pointed to one professional childcare expert who claims that a three-year-old child who wants a Martini with his parents might feel "rejected."

Doctor Dennis said that physicians attending this all-day session will "receive a post-graduate course in child training, and what they hear will have great impact for the good of their distraught patients."

Doctor Rabinovitch, who will discuss teenage problems in boys, said that "disturbed teenagers present one of America's greatest current social problems."

He said that in his lecture he would cover the very high rate of school drop outs before graduation, close to 30 per cent; the large pool of unemployable adolescents out of school; the growing number of delinquents, now approaching one million a year, and the many childhood marriages and their impact.

Doctor Delano will cover significant psychological and emotional issues involved in the evolution from childhood to adulthood and the vicissitudes of this emotional evolution.

The moderator, Doctor Bakwin, will discuss some of the reasons behind the change in body proportions of children.

"During the past century," he said, "the average height of adults has increased by four inches. The acceleration in growth begins early. Already by the end of the first year of life babies are about 1.5 inches taller than they were in the 1880's."

Doctor Bakwin believes that the early maturation of children and their larger size has widespread social and medical significance.

"The frustrating period between the time when drives for self-expression, social dominance, sex experience, economic independence appear and the time when these drives and desires can be satisfied is prolonged. Attitudes must be re-evaluated regarding the length of compulsory education, the proper age for military service, the age for marriage, the time to choose a career, the age of responsibility for criminal acts, inheritance laws and child labor." □

AMA-NRC Adopt Policy On Drug Addiction

To clear up any misunderstanding about the American Medical Association's attitude toward drug addiction, the AMA met on May 14th with the National Research Council of the National Academy of Sciences, and the two groups released a joint statement on the subject, which was later commended and supported by the Federal Bureau of Narcotics.

The AMA and the National Research Council for many years have been concerned about and have studied the narcotic drug addiction problem. To assist in carrying out its studies, the American Medical Association collaborated with the American Bar Association in establishing a Joint Committee which made an Interim Report to the two organizations in 1958, and a Final Report in 1959.

It is concluded that there is widespread public and professional misunderstanding about this subject, specifically (1) that the Federal Bureau of Narcotics believes drug addiction to be a crime; a belief that is contrary to the Federal law and its application by the Bureau, and (2) that the American Medical Association proposes the establishment of community ambulatory clinics for the withdrawal of narcotics from ad-

dicts or for the continuing maintenance of addicts on narcotics; a belief that is contrary to the official position of the American Medical Association.

Historically society has found it necessary to employ legal controls to prevent the spread of certain types of illness that constitute a hazard to the public health. Drug addition is such a hazard.

The successful and humane withdrawal of individuals addicted to narcotics in the United States necessitates constant control, under conditions affording a drug-free environment, and always requires close medical supervision.

The successful treatment of narcotic addicts in the United States requires extensive post-withdrawal rehabilitation and other therapeutic services.

The maintenance of stable dosage levels in individuals addicted to narcotics is generally inadequate and medically unsound and ambulatory clinic plans for the withdrawal of narcotics from addicts are likewise generally inadequate and medically unsound.

As a result of these conclusions the American Medical Association and the National Research Council oppose on the basis of present knowledge such ambulatory treatment plans.

These two organizations support (1) after complete withdrawal, follow-up treatment for addicts, including that available at rehabilitation centers, (2) measures designed to permit the compulsory civil commitment of drug addicts for treatment in a drug-free environment, (3) the advancement of methods and measures towards rehabilitation of the addict under continuing civil commitment, (4) the development of research designed to gain new knowledge about the prevention of drug addiction and the treatment of addicted persons, and (5) the dissemination of factual information on narcotic addiction.

DOCTORS ATTACK POLIO

Several county medical societies have organized and conducted mass polio immunization programs this Spring, using the newly released oral vaccine.

Reports have been received on such activities in Comanche, Garfield and Carter counties. Physicians in these areas and possibly others have recognized oral monovalent vaccine as an effective weapon to eventually eradicate crippling poliomyelitis.

As a by-product of the mass immunization activity, the voluntary health contribution on the part of private physicians proved to be a fruitful builder of public goodwill, at a time when the profession was in need of all the public confidence it could muster.

Comanche county started the ball rolling during the first week of May, immediately prior to the OSMA annual meeting. Doctor Charles Green, Chairman of the OSMA Council on Public Health from Lawton, reported on the project to the House of Delegates, and other county medical societies launched similar endeavors soon afterwards.

Probably the most extensive campaign was conducted in Garfield county where nearly 50,000 persons received the vaccine.

During the OSMA annual meeting of the House of Delegates, the following statement was formally endorsed:

1. There is now no imminent danger of polio in Oklahoma because of the current high level of immunization. This level should be maintained and increased by all available means, including the use of killed parenteral virus vaccine.

2. It is believed that oral monovalent vaccine is best used and is most effective on a community basis. Therefore, private physicians, county medical societies and health departments should plan their immunization programs according to availability of the vaccine. It is recommended that medical supervision and direction be provided for community immunization programs.

3. Where the total community programs can be organized and initiated by May 21, 1962, Type I should be given; with Type III given as a second dose during the month of June, 1962. The third dose, Type II, should be given in the Fall, because it is not advisable to administer oral polio vaccine during the normal polio season: July, August, September, and possibly October.

4. All three types of oral monovalent polio vaccine are now licensed for use, but should only be given after careful review of the manufacturer's package insert.

While it is reportedly too late to begin any new immunization programs now, all county medical societies are urged to consider an oral vaccination project at the conclusion of the polio season.

OSMA Salutes Essay Winner and Teacher

Ricki Graef, Lawton High School senior, the first place winner in the essay contest sponsored by the Governor's Committee on Employment of the Handicapped, received congratulations and valuable prizes at the annual meeting of the committee, held in April at the State Capitol's Blue Room.

Subsequently, she was named national winner by the President's committee in Washington, D.C., and received a $1,000 award.

For her Oklahoma honors, she received an expense-paid trip to the national meeting from the AFL-CIO, a gift certificate from Associated Industries, and a savings bond from the Oklahoma Association of Insurance Agents.

William K. Ishmael, M.D., representing the Oklahoma State Medical Association, was on hand for the Oklahoma ceremonies to congratulate Ricki and to present her English teacher, Miss Elaine Smith, with an expense-paid trip to Washington, D.C.

Miscellaneous Advertisements

PHYSICIAN wanted for established practice in Ralston, Pawnee County. Large agricultural area surrounds town of 1,000 population. Hospitals available in two nearby locations. Excellent school and churches, thirty-five miles from OSU. Contact Clara M. Powell, P.O. Box 112, Ralston, Oklahoma. Telephone REdwood 8-4289.

HOUSE STAFF PHYSICIAN Wanted: St. Francis Hospital, Tulsa, desires physician to work half-days 4 days per week, round-the-clock on 5th day. Salary $8-900 per month. Contact W. D. Hoover, M.D., Pan American Building, Tulsa.

FOR SALE: Moline's Clinic in Lawton. Fully equipped, 1,500 square feet; 200 M.A. G.E. X-ray; laboratory equipment. Leaving as soon as possible. Terms. Lease or sub-lease. Contact Lester Moline, M.D., 2503 Sheridan Road, Lawton, Oklahoma. Call ELgin 3-4760.

PHYSICIAN, age 30, with experience in general practice and surgery, wishes association or partnership with established general practitioner. Military obligation fulfilled. Contact Key G, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

LOST—American Optical Company Spencer binocular-type microscope, serial #418054. Contact Andrew Talley, Administrator, Grady Memorial Hospital, Chickasha, Oklahoma.

WANTED EXPERIENCED G.P. to take over well established practice and well equipped offices in surburban Oklahoma City. Write Key D, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: In Norman, office equipment and medical library of late W. T. Mayfield, M.D. Also retirement home in Boston Mountains, south of Fayetteville, Arkansas. Contact Jack Luttrell, First National Building, Norman, Oklahoma.

ASSOCIATES WANTED—One for Internal Medicine and an Obstetrician to take over active growing practice. No financial investment. Colorado location. Write Key C, Oklahoma State Medical Association, P. O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: 100 MA Kelly-Koett X-Ray in excellent condition, used four years. Make offer. Contact A. M. Brown, Jr., M.D., The Perry Clinic, Perry, Oklahoma.

FOR SALE: Book case, instrument case, baumanometer, microscope, Cameron electric knife, coagulator, small sterilizer, seven stainless steel instruments, tonsillectomy set and many other instruments. Contact C. O. Epley, M.D., 31244 North Youngs, Oklahoma City.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

POSITION for physician to work full time in University Health work at Oklahoma State University in Stillwater. Excellent working conditions, regular hours and many extra benefits. Contact Donald L. Cooper, M.D., Director, Student Health Service, Oklahoma State University, Stillwater, Oklahoma.

FOR LEASE: Air conditioned space in new section of shopping center—N.E. corner Britton Road and May Avenue. 900 to 3600 square feet, arranged to suit tenant. Reasonable rent. Contact O. Alton Watson, M.D., 1200 North Walker. CE 5-5496.

OSMA JOURNAL / *deaths*

MARVIN E. STOUT, M.D.
1885-1962

Marvin E. Stout, M.D., 76, pioneer physician, founder and owner of Oklahoma City's Polyclinic Hospital, died May 6, 1962.

A native Texan, Doctor Stout came to Oklahoma where he graduated from the University of Oklahoma School of Medicine in 1910. A year later, he established his practice in Oklahoma City. During World War I, he served as a captain in the army medical corps in France.

For rendering outstanding service to humanity and the medical profession for over half a century, Doctor Stout was awarded an Honorary-Life Membership by the Oklahoma State Medical Association in 1958.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

skeletal
muscle
spasm is

tractable

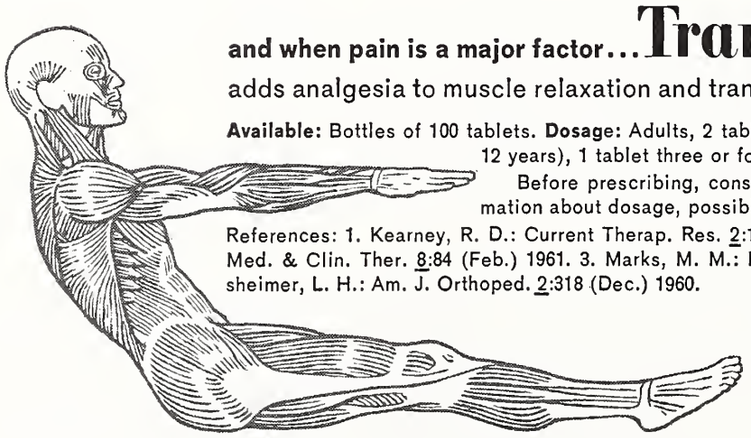
with **Trancopal**®
brand of chlormezanone

Low back pain and other skeletal muscle spasms are tractable disorders when you treat them with Trancopal, the relaxant that quickly eases the spasm and gets the muscle moving. You have a more tractable patient with Trancopal, too —its mild tranquilizing action makes him less irritable, better able to bear his discomfort, more willing to cooperate in physiotherapy.

These two complementary actions of Trancopal are commented on in many recent reports; e.g., Kearney[1] states: "...Trancopal has proven to be an extremely effective striated muscle relaxant and subcortical tranquilizer." Cornbleet,[2] discussing the use of Trancopal in dermatologic practice, comments: "Noteworthy was the soothing effect of chlormezanone without interference with normal activities or alertness...Patients were found more tractable and easier to control."

Marks[3] found that in patients with backache "...Trancopal offered considerable relief by alleviating both apprehension as well as musculoskeletal discomfort." Hergesheimer[4] comments: "...Trancopal acts to reduce the initial painful spasm and to allay anxiety, resulting in a cooperative patient whose subsequent recovery and return to work is accomplished more quickly."

Available: 200 mg. Caplets® (green colored, scored), 100 mg. Caplets (peach colored, scored), each in bottles of 100. **Dosage:** Adults, 200 mg. three or four times daily; children (5 to 12 years), from 50 to 100 mg. three or four times daily.



and when pain is a major factor...Trancoprin® ASPIRIN [5 GRAINS] 300 MG. TRANCOPAL ..... 50 MG.

adds analgesia to muscle relaxation and tranquilization

Available: Bottles of 100 tablets. **Dosage:** Adults, 2 tablets three or four times daily; children (5 to 12 years), 1 tablet three or four times daily.

Before prescribing, consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

References: 1. Kearney, R. D.: Current Therap. Res. 2:127 (April) 1960. 2. Cornbleet, T.: Antibiotic Med. & Clin. Ther. 8:84 (Feb.) 1961. 3. Marks, M. M.: Missouri Med. 58:1037 (Oct.) 1961. 4. Hergesheimer, L. H.: Am. J. Orthoped. 2:318 (Dec.) 1960.

Winthrop LABORATORIES
New York 18, N.Y.

1696M

"Speak your belief in deeds," our theme for the past year, might well be the continuous theme for each State Convention. The annual meeting is basically the summary of belief culminated by deeds.

The scheduled meetings of the convention were as follows: The annual dinner and meeting of the Executive Board were Friday night, May 4. Because of the week-end schedule, our general sessions, formerly held over a two-day period, were in session Saturday morning and afternoon, recessing only for luncheon. Sunday we had our luncheon and style show; post convention school of instruction followed a breakfast Monday morning.

Before welcoming and listing our State Officers for 1962-63, we should like to proffer our deepest gratitude to Mrs. Pat Fite, our Past President, and to all of the officers and chairmen who have served for the past year. Attending members particularly appreciated the plaque for Mrs. Fite, presented by Clinton Gallaher, M.D., from members of the State Medical Association, in recognition of her year's work.

Officers for the coming year, elected at the second general session, include:

President: Mrs. Milton Berg, Tulsa*

President-Elect: Mrs. Tom C. Sparks, Ardmore

First Vice President: Mrs. James P. Luton, Oklahoma City

Second Vice President: Mrs. Richard C. Witt, Muskogee

Recording Secretary: Mrs. J. F. York, Madill

Treasurer: Mrs. C. F. Foster, Jr., Oklahoma City*

Treasurer-Elect: Mrs. F. H. McGregor, Oklahoma City

*Previously elected

Delegates elected to represent the State Auxiliary during the National Convention:

Mrs. Virgil Ray Forester, Oklahoma City

Mrs. Worth M. Gross, Tulsa

Mrs. Harlan Thomas, Tulsa

Mrs. C. L. Oglesbee, Muskogee

Congratulations to our new President, Mrs. Berg, and to every officer and chairman. In accepting the gavel, Mrs. Berg asked for continuity of projects and concentration of individual members on goals for the coming year. She introduced our theme for the year: "Aim for Excellence in Achievement."

Mrs. Fite and the general membership attending convention wish to thank Mrs. Delbert G. Smith, Convention Chairman, her Co-Chairman, Mrs. Sterling T. Crawford, and all of the members who served on the convention committee. We thank you for the hours of planning, the pleasing appointments, and the tasteful menus we enjoyed.

In the coming summer months we shall refer to the convention often, acquaint you with any new ideas we receive from your chairmen, and wish you well in getting all of your plans formulated for a good beginning in the fall. In addition to wishing you well, we highly recommend that every officer and chairman of county auxiliaries renew or subscribe to the *Bulletin*, our national publication, which we would rename: *Our Invaluable Bulletin*. For members in general, it is of great interest; for officers and chairmen, it is a must.

Pages should be devoted to Mrs. Aaron Margulis of Santa Fe, New Mexico, our National Director and guest speaker. In these days when superlatives are lavished upon soap—and hyperboles upon hexachlorophyl, it does not seem fitting to describe Mrs. Margulis in glowing terms. So, let us say that our every meeting was enriched by a woman of great charm and equal depth. We can understand why she resides permanently in the "Land of Enchantment." □

OSMA JOURNAL / *the last word*

County Medical Societies have been active in their efforts to defeat the King-Anderson Bill, spurred on by the ominous implication of the socialized medicine aspects of the measure, and aggravated by the aggressive actions of its promoters.

Tulsa County Medical Society has been exceptionally active . . . since April 19, there have been four telecasts, numerous newspaper ads, large-scale distribution of informational literature, more than twenty personal appearances by doctors, news releases and an effective letter-writing campaign by the auxiliary.

Oklahoma County has been active too, with television programs, advertising, and letter-writing campaigns. Carter county made a similar diversified effort, and reports of enthusiastic action have been received from Washington, Pottawatomie, Comanche, Bryan, Stephens, Ottawa, Craig and Muskogee counties.

The OSMA Office has been assisting with the distribution of films and materials. President Kennedy's May 20th address on the King-Anderson Bill was answered by a press release from President Carlock on the morning of the 21st.

Doctor Edward Annis, AMA's speaker-deluxe, appeared at the Oklahoma City Men's Dinner Club on May 22nd. In addition to convincing Oklahoma City's business and civic leaders that the King-Anderson Bill is undesirable, he received extensive publicity from Oklahoma City newspapers and television stations.

There have been rumors stimulated by a newspaper editorial, that Senator Kerr is weakening in his opposition to King-Anderson. These rumors are unfounded, and Senator Kerr has said so. He will continue to be one of the most active and effective opponents of the bill.

The Oklahoma Chapter of the American College of Chest Physicians has named the following new officers: George L. Winn, M.D., Oklahoma City, President; J. Floyd Moorman, M.D., Oklahoma City, Vice-President; and, Dean C. Walker, M.D., Tulsa, Secretary-Treasurer.

Solicitors of the Union Circulation Company, Atlanta, Georgia, are reported to be fraudulently misrepresenting themselves as OU medical students as they call on physicians and druggists with magazine subscription offers. The company denies any responsibility for such activities.

AMA offers model contracts for partners . . . prepared by the AMA's legal staff, the model medical partnerships form grew out of an extensive study of existing contracts among doctors. Many of the existing contracts studied were found to be inadequate, particularly in regard to tax consequences and in provisions for retired and deceased partners. Copies of the model contract may be obtained from the AMA Law Division, 535 North Dearborn, Chicago 10, Illinois.

Chiropractors are reported to be promoting a modification in Oklahoma hospital licensure laws to permit a patient to take his own "healing arts practitioner" into tax-supported hospitals, regardless of whether or not the practitioner has staff privileges. Hospitals would be exempt from liability for any incompetent deed of the non-staff practitioner. A committee of the Legislative Council sidestepped the far-reaching proposal "for further consideration."

An OU pediatric resident, Doctor James Beaty, took "best paper of the day" honors at the eighth annual meeting of the Oklahoma Association of House Staff Physicians, held May 11 at Oklahoma City's VA Hospital. His paper was "Hypoproteinemia Due to Loss of Serum Protein in the Stool as Demonstrated by Immunochemical Techniques."

New President of the Oklahoma University Chapter of the Student AMA is Donald Ferrell, junior from Amorita.

June 24-28	Annual Meeting, AMA, Chicago.
September 9	Annual Meeting, Red River Valley Section, Oklahoma AAGP, Lake Texhoma Lodge.

..... a memo from and

published by Oklahoma Blue Cross - Blue Shield, here's....

JUNE 1962

NEW CONTRACT CHANGES AND FEE SCHEDULES

The following changes in our programs are contractual changes and will soon appear in Blue Cross-Blue Shield Membership Agreements. These changes will become effective within 12 months beginning on July 1, 1962.

Blue Cross

GROUP - Pre-existing conditions exclusion clause has been removed.

NON-GROUP - A 270-day waiting period for all pre-existing conditions will be inserted. (Detailed benefits listed below under Blue Shield.)

Blue Shield

GROUP - Pre-existing conditions exclusion clause has been removed.

Up-dated Fee Schedules with maximums of $300 and $400.

NON-GROUP - A 270-day waiting period for all pre-existing conditions will be inserted. Benefits will not be provided for any condition (known or unknown) existing prior to the effective date of the contract until the membership has existed for 270 days. In addition, a 270-day waiting period is imposed for benefits relative to surgical procedures and all other care pertaining to: Tonsillectomies, Adenoidectomies, Circumcisions (except newborn of eligible OB case), Uterus, Prostate, Varicose Veins, Ovaries, Fallopian Tubes, Gall Bladder, Hemorrhoids, Hernias (including cystocele, rectocele).

Up-dated Fee Schedules with maximums of $300 and $400.

Extended Benefits

1. Skin Cancer, Scarlet Fever and Transportation Benefits removed from this endorsement. Skin Cancer and Scarlet Fever remain Basic Blue Shield Benefits.
2. Only prescription drugs will now be payable.
3. Cancer payments' limits raised to $2500. in Blue Cross and $1000. in Blue Shield.
4. Leukemia and Hodgkins Disease added to list of covered diseases with same limits as Cancer.

Detailed information regarding these and other changes will be mailed to each physician in June. Please alert your Medical Assistant to be on the lookout for a large envelope marked:

"IMPORTANT NEW CHANGES AND BENEFITS"

(a supplement to the Journal of the Oklahoma State Medical Association)

The JOURNAL of the Oklahoma State Medical Association

JULY
1962
Vol. 55/No. 7

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D.
(Heart Page)
MRS. JOSEPH J. MARIL
(Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

Inaugural Address 259
The Medical Profession and Public Opinion 259
President's Page 262

scientific

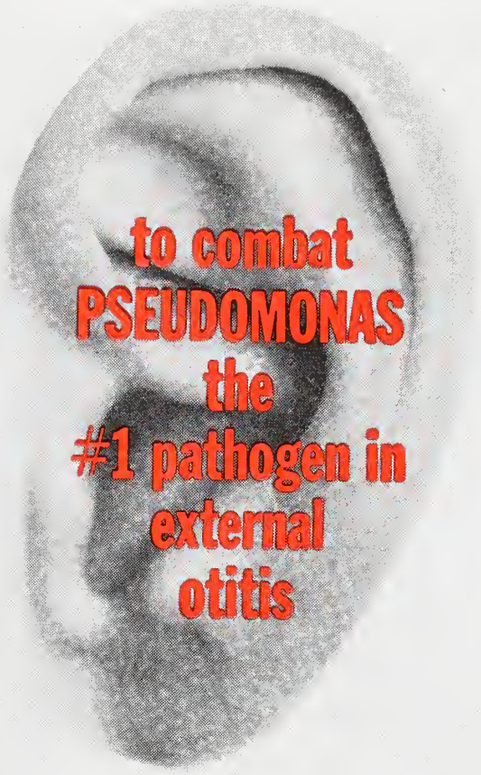
Primary Lymphoma of the Lung, A Case Report, *Warren L. Felton, II, M.D., and Henry T. Russell, M.D.* 263
Comprehensive Management of Mental Retardation: Description of One Approach to the Problem, *Sylvia O. Richardson, M.D. and Harris D. Riley, Jr., M.D.* 267
The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery, *Robert L. Gosser, M.D., Glen G. Cayler, M.D., G. Rainey Williams, M.D. and Gilbert S. Campbell, M.D.* . . . 272
Heart Page, *Glen G. Cayler, M.D.* 276

medical center

Dean's Message 277
On the Nature of Progress, *Carleton B. Chapman, M.D.* 278
Abstracts 285
Faculty News 286

news

The Goals of OSMA 288
Officers and Trustees of the Oklahoma State Medical Association 289
OSMA Council, Committees 290
8th Southeastern Clinical Symposium—McAlester . . 292
15,000 Attend AMA Meeting 292
Social Security Bill Hits Senate 292
Proceedings of the 56th Annual Session of the House of Delegates of the Oklahoma State Medical Association 293
Letter to the Editor 294
Miscellaneous Advertisements 296
Index to Advertisers xliv
Auxiliary xlv
The Last Word xlvi



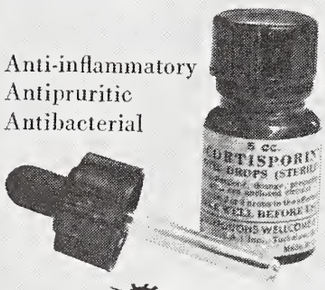
'CORTISPORIN'®

OTIC DROPS (sterile) brand

the #1 therapy for inflamed, infected ears

Because it provides Polymyxin B for the eradication of Pseudomonas, the prime cause of external otitis, 'Cortisporin' is the logical choice of treatment for inflamed, infected ears. Polymyxin B is the antibiotic specific for *Pseudomonas aeruginosa* infections, and is, for this pathogen, the standard of effectiveness against which other antibacterials are measured.

- Anti-inflammatory
- Antipruritic
- Antibacterial



Each cc. contains:
'Aerosporin'® brand Polymyxin B sulfate..... 10,000 units
Neomycin Sulfate..... 5 mg.
(Equivalent to 3.5 mg. Neomycin Base)
Hydrocortisone ..... 10 mg. (1%)

Bottles of 5 cc. with sterile dropper.

Literature available on request.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

Inaugural Address

Presented by J. Hoyle Carlock, M.D., President of the Oklahoma State Medical Association, at Inaugural Ceremonies, May 7, 1962.

Such a fine introduction! My father would have thoroughly enjoyed it: my mother would believe every word of it: and I, even with its obvious generosity, do highly appreciate it.

I assume the office of your President with humility and servility, even if I were not following such illustrious presidents as Doctors Clint Gallaher and Walter Brown, I would still accept the chair with a sense of deep responsibility and dedication. I plan to carry on the programs they have so courageously brought forward.

The success of our Association rests on the constructive action of our entire membership. The progress of the Association is made principally through effective working committees. I feel that many fountainheads of talent have remained untapped in our organization, and, I strongly solicit the active participation of, not only those who have served ably in the past, but, also those many others of you who are interested in serving in the future. Please let *your own* interests, and those of your fellow local society members be known, to the end, that all may join in strengthening the progess of Oklahoma's Medical Association.

And now as the anticipated prospects for this evening call for the singing of the lark, it behooves the lesser birds to stop their twittering. So—

May I say, I am indeed honored and deeply grateful for your having chosen me to be President of the Oklahoma State Medical Association. I shall make every effort to merit your confidence, and I shall be seeking your aid and counsel throughout the year. Sincerely, I thank you.

The Medical Profession and Public Opinion

RT. REV. MSGR. TIMOTHY P. O'CONNELL

WITHIN THE last few decades a trend has become noticeable toward downgrading the esteem once held by the medical profession. The trend has become stronger recently under the impact of other sociological problems, but even before this, articles appeared in national magazines or newspapers on abuses involving members of the medical profession.

Editorials have appeared commenting on some aspects of medical training or qualification which carries with it disagreeable practices, quackery, and unnecessary surgery, as well as the high cost of medical and hospital care. The consequence is that an esteemed and revered profession has been unjustly and unfairly downgraded in the eyes of the public by emphasis on defects or abuses and one of man's best friends has become the increasing object of jibe, suspicion, unfounded and unfair criticism.

Defamation of the profession is not offset by an occasional outburst of praise for a prominent physician who wins acclaim for research. This is simply an emphasis on the spectacular which soon fades and is forgotten except by other doctors. Such publicity in no way fully counteracts the erosion which has been going on in relation to the esteem once held in every community for physicians.

editorial

It is not in the best interest of the community to have this attacking and downgrading going on because it causes loss of faith and skepticism in the integrity of the physician whose skill and fidelity are essential to the community's welfare.

Everyone, sooner or later, needs a physician. When we do we have to place our life and safety in his hands. His responsibility is great and for him to carry it well, a patient must have faith in his integrity.

The physician's lore and skill are irreplaceable and indispensable but they cannot be used well if he works in an atmosphere of suspicion and distrust. Consequently it arouses concern in some of us to hear the medical profession lowered in the esteem once paid to it. The reasons for this esteem remain and the modern doctor still exemplifies all the basic virtues that his predecessors in medicine did.

We hear paeans of praise for the old country doctor, but often this is used to belittle modern doctors. It is said that the practitioner of old was a dedicated, selfless person, who worked morning, noon and night for his patient's welfare. He knew everyone in town and delivered everyone's baby. He was the friend of all. Now heads wag in sorrow that this type of physician has passed away as if he had been replaced by someone who doesn't measure up to the standard.

This is a false picture.

The idealism which animated the horse and buggy doctor is still present in most members of the medical profession. The modern doctor is as devoted to his patients as were his predecessors. He, as they, still brings his anxieties about their welfare home with him. Many hours at the bedside are still spent by today's physician trying to allay pain or watching for some change to use any therapy which might help.

His home life is frequently reduced to a minimum. His family is deprived of any constant and uninterrupted attention because of the distress of patients claims his time. He walks the corridors of the hospital early and late when most people are in their beds. He counsels when misfortune strikes the family of his patients. Patiently, kindly and knowingly the modern doctor still listens to the woes of mankind in the tradition of those who went before him.

It may be asked, therefore, "Why the unfavorable comparisons?" It must be due to the fact that most people are unaware that methods of treating the sick have changed in the last few decades. It is not the doctor who has changed, it is the practice of medicine itself.

The horse-and-buggy doctor of the gilded past had a limited number of diagnoses and only a few remedies which had limited efficiency. He had to watch and wait for nature to cure but he did his best to help. He had no laboratories to assist him. Antibiotics were unknown. Microscopes were primitive; x-rays did not exist.

His diagnoses were made mainly by use of his senses. He called upon his experience and that of others to help evaluate his patient's condition and prescribe treatment. He performed wonders with what he knew and the means he had. The average life expectancy in the not-too-distant past was not high and babies had to be hardy to survive.

This has changed so much that now the average man and woman should live into his sixties. This is possible only because the modern doctor is armed with a thousand aids which research has given him and because of all the facilities of the hospitals where he works. Moreover, when he needs assistance, he has at his side highly-skilled technicians. No longer does he have to wring his hands like the horse-and-buggy-doctor did while his patient expires from pneumonia, gall bladder disease, ulcers, skull fractures, diabetes and other ills to which the flesh is heir.

Americans have become so spoiled that now they take all these advances for granted. Forgotten is the tremendous and constant effort of the physician to give this service; forgotten, too, is that he can accomplish his task only by discarding methods of the past.

The modern physician uses new techniques from those employed by his predecessors. Today his patient, in most cases, can and should come to his office, for in this way he can treat them under controlled conditions. Few homes have the means which the doctor needs.

The majority of patients, if they really need bed care, should go to a hospital. They cannot be protected or cared for as effectively in their own homes. To ask the doctor today to care for serious diseases in the home is to deprive the patient of the benefits of modern medicine and could expose him to the danger of a quick demise.

To request home treatment of a doctor today in many conditions is like asking a man to lift a ton but depriving him of all mechanical aid to enable him to do it. He might try but his efforts would be fruitless.

For these and other reasons the modern physician prefers to make his diagnosis, if at all possible, in his office and give treatment where he controls conditions. When he feels that he cannot so treat the patient, he avails himself of the hospital. His patient is not penalized by this but benefits. If the patient really wishes to live and be relieved, if possible, of his distress, he would be completely blind to demand that he be treated with the old methods.

The public, therefore, should not demand a return to the days of yore for that would be to turn back to the pages of helplessness in the face of many of mankind's ills. The doctor will still visit the home when it is necessary but he might give poor service to his patient if he would continue to treat him at home and deprive him of the assistance he can have in a well-equipped hospital.

The horse-and-buggy-doctor would be the first to applaud the change because he would recognize, in the new methods, a fighting chance which he often lacked in the past.

It's tiresome to hear about physicians who took only so many minutes to do this or that. Dismissed from view is the fact that behind the minutes of treatment are years of professional training, constant application at the bedside and study of world research.

Would the complainer prefer an hour or two fumbling by some unskilled person on his insides? Would he prefer to get some patent medicine to relieve his distress from the corner drugstore?

It is obvious that time has nothing to do with the value of treatment. A treatment which takes a few minutes at the proper time can mean the saving of a life. The use of a knife may seen simple, but it is necessary to know when and how to cut. There is no easy way to learn how to do it well and years must go by before it can be done competently.

When a patient receives treatment, be it long or short, he is the recipient also of science and skill arduously obtained. Its worth and value cannot be measured by the time spent.

Many who criticize medical fees have no complaint when their automobile, washing machine, television set or plumbing is repaired. Somehow they exclude the doctor and the hospital from the economic system for which neither he nor it is responsible.

Doctors and everyone else in the community are affected economically by increased costs in agriculture, business and manufacturing. Every rise in prices due to increased costs affects the physician as well as his patients. Furthermore, in value received for fee paid, there is no comparison between what the physician offers and that furnished by other services.

A competent physician is one of any community's greatest assets. Everyone, sooner or later, is grateful that a physician is nearby. It is, therefore, only common decency to respect and honor this profession and its practitioners. The majority of them are dedicated, selfless men who have spent years to obtain the skill which benefits all of us.

They are with us from the first stirrings in the womb until we close our eyes in death. We should never forget the debt we owe them and the esteem that we should give them.

The scriptures state, "Honor a physician for the need thou hast of him for the Most High hath created him, for all healing is from God and he shall receive gifts of the King. The skill of thy physician shall lift up his head and in the sight of great men, he shall be praised." (Ecclesiasticus 38, v. 1-4.)

Reprinted, by permission, from the Catholic Free Press, March 16, 1962. The author is officialis of the Diocese of Worcester and bishop's representative at St. Vincent's Hospital, Worcester, Massachusetts.

In this issue of the *Journal,* I have announced my program for the 1962-63 organizational year as well as the names of physicians who have agreed to serve important roles in the Council and Committee structures of the Oklahoma State Medical Association.

The presidency of such an important organization as the OSMA would be a frightening responsibility were it not for the large-scale support of physicians who are so willing and able to expend their energies for the benefit of the profession and the public it serves. I am most humble in my gratitude for the supportive team which has formed around me, and thereby face my responsibility with a confidence engendered by the knowledge that I am but one member of Oklahoma's dedicated medical family.

Planning a program a year in advance is a sobering experience. The results of my reflections appear on page 288 of this issue.

The program must be tempered with flexibility, to the extent that it will be subjected to the judgment of those who are to help me transmit it into action. Working together, as a democratic organization, we hope to accomplish another productive year in the evolution of Oklahoma Medicine.

J. Hoyle Carlock, M.D.

OSMA JOURNAL/scientific

Primary Lymphoma of the Lung

A Case Report

WARREN L. FELTON, II, M.D.
HENRY T. RUSSELL, M.D.

The clinical and pathologic features of a case of primary lymphosarcoma of the lung are presented. The literature on the subject is reviewed.

SINCE THE report by Churchill[4] of the first case in 1947, more than 50 cases of primary pulmonary lymphoma have been added to the literature.[1-20, 22] The majority of the lesions were classified as lymphocytic lymphosarcoma. However, Hodgkin's disease and reticulum cell sarcoma were also reported. Although a few of these cases have evident local lymph node involvement or direct extension beyond the lung, all were considered primary in the lung.

The following case of a patient with a lymphoma primary in and localized to the lung is typical of the majority of reported cases.

CASE REPORT—V. D. McK.

In July 1956, an x-ray examination of the chest revealed an infiltrative lesion in the right mid-lung field in Mrs. V. D. McK., a 57 year-old-white female. A repeat examination in August 1957 showed a slight increase in the infiltrate (figure 1). No further examinations were made until August 1960 when the chest roentgenogram showed a further increase in the density and extent of the infiltrate (figure 2). During this time the patient had been asymptomatic. Because of the increase in the pulmonary infiltrate she was referred to one of us (W.L.F.) for evaluation.

Her family history and past history were non-contributory.

The physical examination showed no significant abnormalities. The vital signs were normal. There was no superficial lymph node enlargement. The chest examination was not remarkable.

Hemogram and urinalysis were normal. Ventilatory function studies showed a 2.75 L. vital capacity with 77 per cent in 1.0 second. Total vital capacity time was 4.0 seconds, and the maximum expiratory flow rate 225 L/min.

She was admitted to Wesley Hospital, Oklahoma City, Oklahoma for further evaluation. Bronchoscopy was done on 9/21/60 with entirely normal findings. Bronchial washings revealed no abnormal cells, and no acid-fast organisms were found on smear or culture.

On 10/3/60 a right thoracotomy was performed. The pulmonary lesion was rubbery

in consistency and located at the junction of the two fissures involving all three lobes peripherally. There was no lymph node enlargement at the hilum or in the mediastinum. The lesion was excised locally utilizing both wedge and segmental resection techniques. Frozen section examination of the tissue was interpreted as being compatible with a malignant lymphoma. Since the lesion appeared to be confined to the lung, a right pneumonectomy was done.

The resected lung specimen weighed 260 grams. Grossly, it showed considerable atelectasis of all of the lobes, particularly in the hilar areas. In the biopsy specimen and in the hilar area, the tissue was purplish gray in color and moderately firm. No distinct isolated tumor mass could be palpated. The peribronchial lymph nodes showed minimal enlargement, and one of the nodes showed questionable caseation necrosis.

Histologically, the lung showed almost complete obliteration of the normal architecture by proliferation with uniform, small round cells which were interpreted as lymphocytes. These showed diffuse infiltration without lines of delineation, and they extended through and obliterated the architecture in all parts of the lung (figure 3). The lesion was interpreted as lymphosarcoma.

The patient has been followed regularly on an outpatient basis, and there has been no evidence of recurrent lymphoma. The latest examination was on February 1, 1962, 16 months following pneumonectomy and five and one-half years after initial discovery of the lesion by x-ray examination.

DISCUSSION

Clinical Features

Primary pulmonary lymphoma has been reported in patients ranging in age from 19 to 73 years with an average age of 50 years. In 56 reported cases, 35 were females and 21 were males.

Many of the patients were asymptomatic, their lesions being discovered on x-ray examination. Pulmonary symptoms when present included cough, hemoptysis, recurrent pneumonia and shortness of breath. A few patients had generalized symptoms such as malaise, weakness and weight loss. The presence of a pulmonary lesion on roentgenogram or recurrent pulmonary symptoms were frequently present one to five years prior to the diagnosis of lymphoma.

Bronchoscopic examination has revealed bronchial compression in some instances, but in only one instance has a diagnosis of lymphoma been reported on bronchoscopic biopsy.[8] In two cases malignant cells were

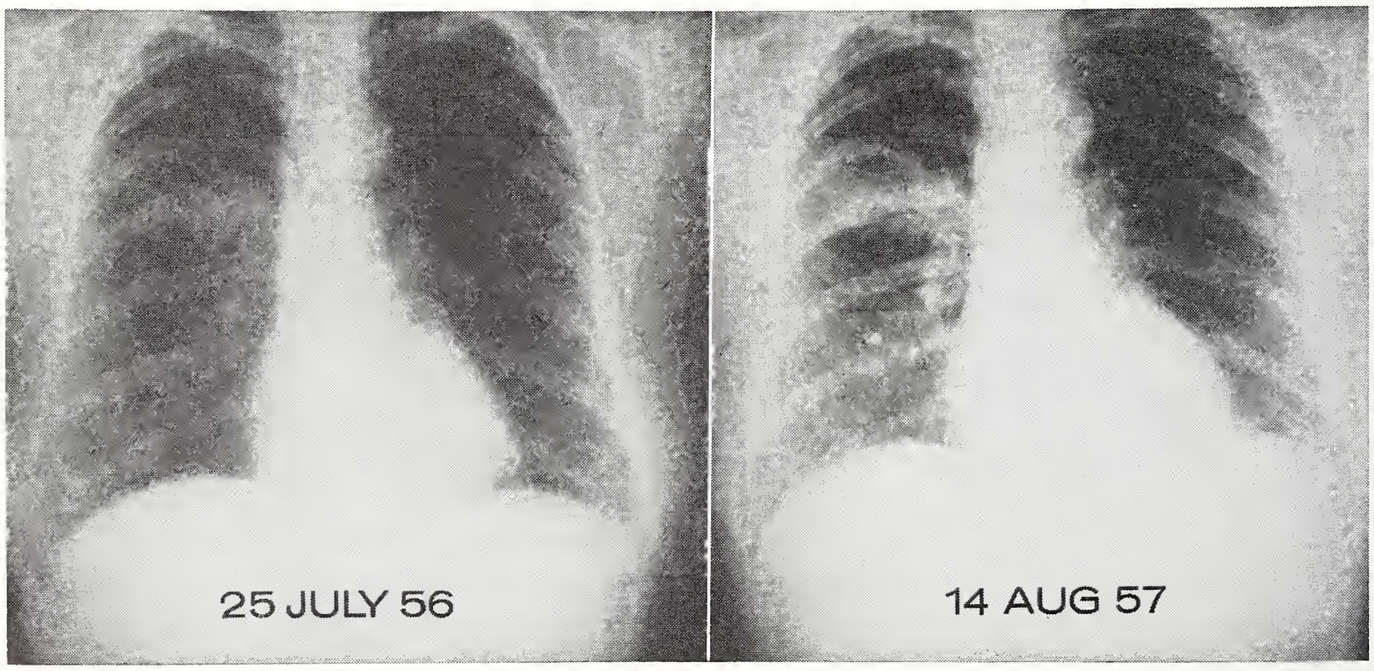


Figure 1. Chest roentgenograms showing the increasing mid-lung infiltrate taken four and three years prior to the diagnosis of lymphoma, during which time the patient was asymptomatic.

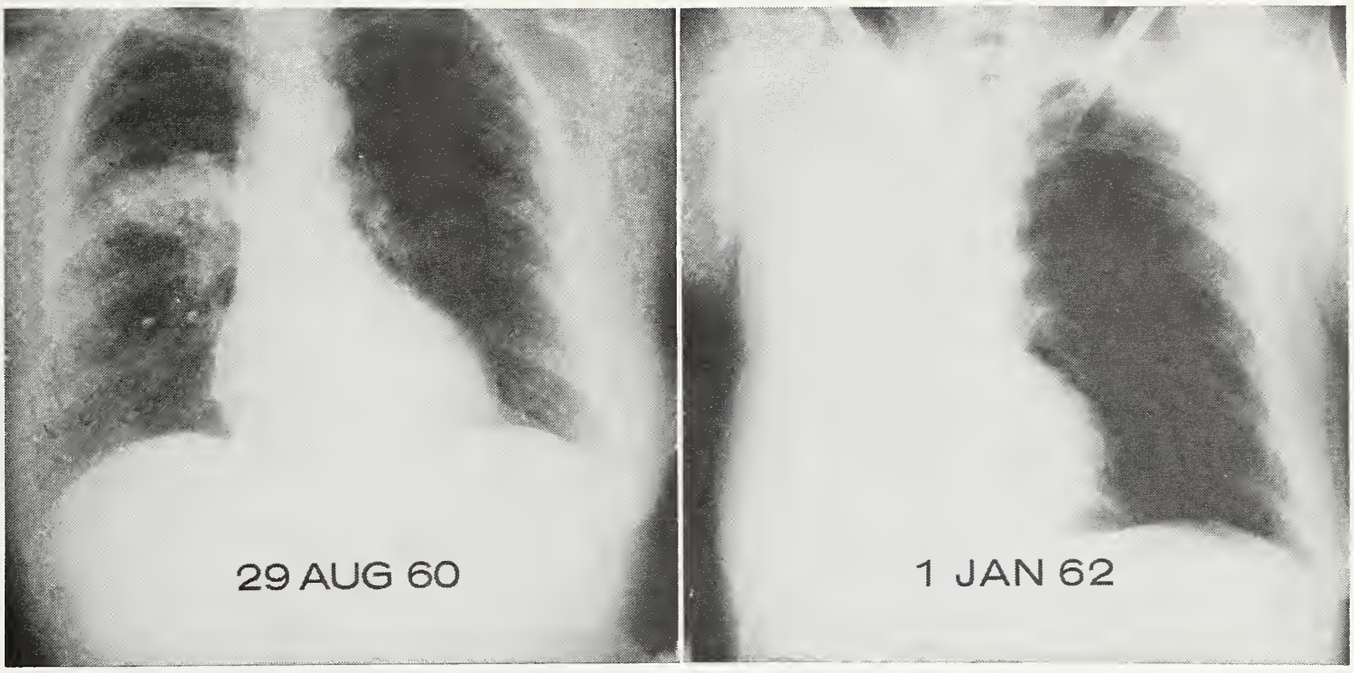


Figure 2. Chest roentgenogram taken prior to pneumonectomy showing a gradual increase in the size and density of the infiltrate in the right mid-lung field since 1957. On the right is a post-operative film taken 15 months following surgery and five and one-half years after the first x-ray evidence of the lesion. There was no evidence of recurrence on x-ray or clinical examination.

found in cytologic examination of the bronchial washings or sputum.[11, 17] The diagnosis was usually made by lung biopsy at thoracic exploration.

The radiographic appearance of pulmonary lymphoma varies from a localized infiltrate to a large mass involving an entire lobe or the greater part of the lung. A few cases have been reported showing cavitation.[6] The only characteristic feature of the x-ray findings is the long duration, many of the lesions being evident radiographically several years before the diagnosis is made.

The treatment has consisted of lobectomy or pneumonectomy when technically possible. In some instances this has been followed by post-operative radiation therapy. The nature of the various reports precludes any accurate analysis of the results in terms of five-year survival after treatment. However, 30 of 37 patients who underwent pulmonary resection for lymphoma were alive and evidently free of disease from six to 14 years following surgery. Twenty-two of these patients were followed more than two years after operation. Despite the small group of patients and short follow-up, it is apparent that the results in patients with a primary lymphoma amenable to pulmonary resection are far better than in the patients with a generalized lymphoma involving the lung or in patients with primary bronchogenic carcinoma. It seems reasonable to recommend that pulmonary resection be carried out in these patients and radiation therapy be administered

---

A graduate of Washington University School of Medicine in 1949, Warren L. Felton II, M.D., is certified by the American Board of Surgery and Board of Thoracic Surgery, limiting his practice to thoracic and cardiovascular surgery. In addition to his private practice in Oklahoma City, he is Assistant Professor of Surgery at the University of Oklahoma School of Medicine.

Doctor Felton is a Fellow of the American College of Surgeons, a member of the Southwestern Surgical Congress and the Oklahoma Surgical Association.

A graduate of Washington University School of Medicine in 1947, Henry T. Russell, M.D., has been certified by the American Board of Pathology. In addition to his private practice, he is Assistant Professor of Pathology at the University of Oklahoma School of Medicine.

Doctor Russell is a member of the College of American Pathologists, the American Society of Clinical Pathology and the International Academy of Pathology.

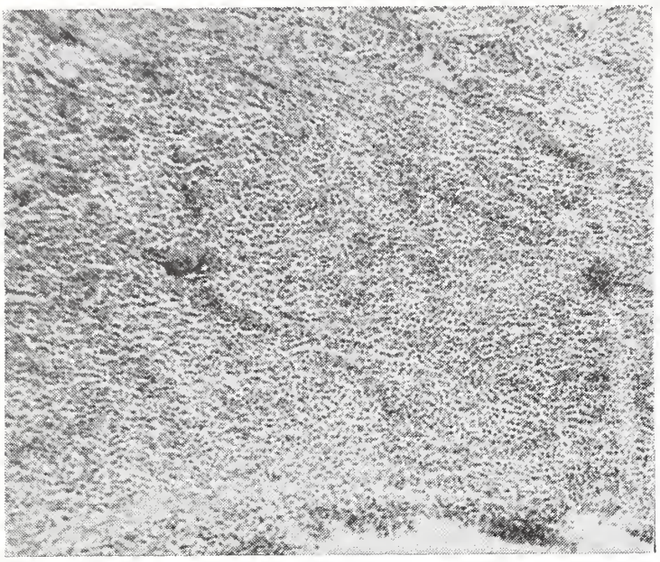


Figure 3. Photomicrograph of specimen (X100). See text for description.

for possible residual or recurrent disease with the expectation of good control of the process.

PATHOLOGIC FEATURES

Most cases of malignant lymphoma of the lung present a single, well circumscribed lesion ranging in size from several centimeters to the greater part of the lobe. In a few cases two to three such lesions are present in the lung. They are generally interpreted as localized lymphosarcoma. Follow-up studies are inadequate for a clear understanding of the biologic behavior of these lesions, but it has been the general experience that it is a relatively benign tumor, quite unlike that of the usual lymphosarcoma. Although post-operative recurrence in the lung has been noted in some cases, generalized involvement has been observed only rarely. For this reason Stout[21] has suggested that the lesion might better be termed benign lymphoma. Another possibility concerning the basic biologic nature of this disease is that it represents an unusual reactive lymphoid hyperplasia in the nature of pseudotumor. For this reason it is sometimes called an inflammatory lymphoid pseudotumor. However, from the histologic standpoint, the lesion cannot be differentiated from generalized lymphosarcoma involving the lungs or from lymphosarcoma involving other organs.

SUMMARY

A patient is presented with a primary lymphoma of the lung who is alive and evidently free of disease 16 months after pulmonary resection and five and one-half years after the first evidence of the disease on x-ray examination.

The clinical and pathologic features of this lesion are discussed in terms of the previously reported cases.

Good results may be expected in patients with primary pulmonary lymphoma where the lesion is amenable to pulmonary resection. □

REFERENCES

1. Anlyan, A. J., Lovingood, C. G. and Klassen, K. P.: Primary Lymphosarcoma of the Lung. Report of a Case, Surg. 27: 559, 1950.
2. Aufses, A. H.: Pneumonectomy for Primary Localized Lymphoma, J. Mt. Sinai Hosp. 17: 693, 1951.
3. Beck, W. C. and Reganis, J. C.: Primary Lymphoma of the Lung. Review of the Literature, Report of One Case, and Addition of Eight Other Cases, J. Thoracic Surg. 22: 323, 1951.
4. Churchill, E. D.: Malignant Lymphoma of the Lung and Pulmonary Coccidiodomycosis, Surg. Clin. N. Amer. 27: 1113, 1947.
5. Cooley, J. C., McDonald, J. R. and Clagett, O. T.: Primary Lymphoma of the Lung, Ann. Surg. 143: 18, 1956.
6. Efskind, L. and Wexels, P.: Hodgkin's Disease of the Lung with Cavitation: Report of Three Cases. J. Thoracic Surg. 23: 377, 1952.
7. Ergin, M. T. and Kemler, R. L.: Primary Lymphosarcoma of the Lung Report of a Case and Summary of the Literature, A.M.A. Arch. Surg. 80: 1005, 1960.
8. Grimes, O. F., Weirich, W. and Stephens, H. B.: Primary Lymphosarcoma of the Lung, J. Thoracic Surg. 27: 378, 1954.
9. Hall, E. R. and Blabes, B.: Primary Lymphosarcoma of the Lung. Dis. Chest 36: 571, 1959.
10. Hazel, W. V. and Jesnik, R. J.: Lymphoma of the Lung and Pleura, J. Thoracic Surg. 31: 19, 1956.
11. Jackson, E., Bertoli, F. and Ackerman, L. V.: Exfoliative Cytology, J. Thoracic Surg. 21: 7, 1951.
12. Maier, H. C.: Primary Lymphosarcoma of Lung, J. Thoracic Surg. 17: 841, 1948.
13. Overholt, R. H.: Lymphosarcoma (Benign Lymphoma?) of the Lung, Cancer Seminar (of the Penrose Cancer Hosp.) 1: 65, 1952.
14. Neubuerger, K.: Lymphoma of the Lung, Cancer Seminar (of the Penrose Cancer Hospital) 2: 249, 1960.
15. Prichard, R. W. and Bradshaw, H. H.: Primary Lymphoid Tumors of the Lung, Arch. Path. 71: 420. 1961.
16. Ransdell, H. T., Bailey, A. W. and Ellison, R. G.: Primary Reticulum Cell Sarcoma of the Lung arising in the Wall of a Pulmonary Cyst: A Case Report, Am. Surgeon 17: 689, 1951.
17. Rose, H. A.: Primary Lymphosarcoma of the Lung, J. Thoracic Surg. 33: 254, 1957.
18. Sarokhan, J. and Morrison, D. A.: Primary Lymphosarcoma of the Lung, Ann. Surg. 138: 140, 1953.
19. Spatt, S. D. and Grayzel, D. M.: Primary Lymphosarcoma of the Lung (A Case Report and Review of the Literature), Ann. Int. Med. 27: 632, 1947.
20. Sternberg, W. H., Sidransky, H. and Ochsner, S.: Primary Malignant Lymphoma of the Lung, Cancer 12: 806, 1959.
21. Stout, A. B.: In Discussion of Overholt (13).
22. Weissman, I. and Christie, J. M.: Primary Lymphosarcoma of the Lung, Arch. Surg. 62: 129, 1951.

Warren L. Felton II, M.D.
1200 N. Walker, Oklahoma City, Oklahoma

*Comprehensive Management of Mental Retardation: Description of One Approach to the Problem**

SYLVIA O. RICHARDSON, M.D.
HARRIS D. RILEY, Jr., M.D.

A comprehensive community diagnostic and guidance center for mentally retarded children established within the framework of a University Medical Center can provide effective teaching as well as service.

BETWEEN three and four per cent of all children born in the United States will at some time in their lives be categorized as mentally handicapped. Thus, approximately 120,000 born each year will be so afflicted. Since mental retardation is merely one symptom of central nervous system impairment these children frequently exhibit multiple handicaps, a most significant factor in planning for overall management.

Mental retardation is not a sub-specialty for any professional group. All of the present experts in the field of mental retardation are self taught; there is no unique, specific body of specialized knowledge relating only to mental retardation as such which could be used as the basis for developing a sub-specialty. However, the major burden of diagnosis, care and management of mentally retarded individuals rests upon the shoulders of the pediatrician. It is therefore incumbent upon the Departments of Pediatrics in teaching institutions to include in the curriculum, in addition to the basic professional training, more information on mental handicaps including normal growth and development, on deviations, on the causes of such deviations and on rehabilitative efforts. Since the physician is not solely responsible for the care and management of children with mental deviations and learning disorders, he must learn to work with members of related professions, such as special education, psychology, speech and hearing therapy, social service, etc. The physician must know more in the area of learning and education, just as the educator must know more about the physiology and psychobiology of the young learner.

In an attempt to provide a more effective approach to this problem the Department of Pediatrics of the University of Oklahoma School of Medicine in 1958 established in the Children's Memorial Hospital a special section—The Child Study Center. The Child Study Center has received support from private sources and United States Public Health Service research grants. Special acknowledgement is due the Junior League of Oklahoma City whose support made possible the initiation of the Study Center. The broad general purpose of the Study Center, in addition to its role as an important teaching tool, is to develop a comprehensive community diagnostic and guidance center with

*From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma. These studies were supported in part by grant OM-24-R1 from the United States Public Health Service.

necessary specialists available to provide adequate services for mentally retarded children. Some of the activities of the Child Study Center are summarized in table 1.

The staff of the Study Center is interested not only in evaluation and diagnosis but in adequate treatment and follow-up. However, the Study Center is not designed as a special entity but as an intrinsic part of the Department of Pediatrics. Medical students and residents are exposed to as many facets as possible in the care and management of deviant children. Techniques of psychological testing, sensory and perceptual testing are taught, as well as physical diagnosis. Patient follow-up includes attending public school special education classes. In this way students and residents learn what the teacher needs from the physician in order to work with a child in the classroom and they learn to make meaningful diagnoses by techniques which are useful for predicting educational needs and placement of children with mental deviations.

An important activity of the Study Center is parent counseling. Of all the tasks which face the physician, dealing with parents of a mentally handicapped child is one of the most difficult. A secure diagnosis is difficult and often impossible before the child reaches the age of four or five years, yet the father and mother desire to know as soon as possible whether their child is subnormal. Failure to recognize the intellectual shortcomings of a child before he reaches school age places on the youngster a burden which can lead to serious and psychologic disturbances.

The research activity of the Study Center is designed to fall into two broad categories. First, long term progressive correlative studies necessitating at least a five year follow-up on patients. The study of these patients begins in the cooperative Perinatal Study Program involving the Departments of Pediatrics and Obstetrics, and the State Department of Health. The patients are then followed through Well Baby Clinics and the Pediatric Clinic at the Children's Memorial Hospital. Those who show signs or symptoms placing them in the category of the "exceptional child" are to be studied and observed further in the Study Center.

Second, the team members are engaged in short term special projects. These projects are regularly reviewed by the whole group, with and without special consultants who may be invited to contribute. Eventually research activity will include such studies as newer metabolic screening methods on retarded children, nutritional research on variously handicapped children, growth and development studies on groups of similarly handicapped children and enzymatic and biochemical studies of congenital defects, in addition to variations of more standard studies.

Children who present various signs and symptoms of mental retardation, and those referred with this diagnosis, are seen in the Child Study Center. These include disorders in the areas of verbal and non-verbal intelligence, language development, perceptual abilities, social maturity and behavior. Referrals are on a statewide basis and are made by physicians, health and welfare workers, teachers or school nurses. Both clinic and private patients are eligible to be seen in the Study Center.

The Study Center is located in the Children's Memorial Hospital within the Department of Pediatrics. The full time staff of the Study Center includes the medical director (pediatrician), a pediatric neurologist, a full time clinical psychologist and a consultant psychologist, a research associate, medical social worker, child development specialist, remedial reading teacher and a secretary. Participants in the Study Center include pediatric and other residents, medical students and trainees in various disciplines as shown in table 1. Staff members of other clinics at Children's Hospital such as Pediatric Neurology, Convulsive Dis-

Table 1.

Activities of the Child Study Center

Service	Teaching
Out-Patient Clinic	Medical Students
Dyslexia Clinic	Pediatric Residents
Evaluation Nursery	Psychiatry Residents
Special consultations as requested	Students in Speech Pathology and Special Education
Patient follow-up	Social Service in-training
Parent counseling	Post-graduate Seminars
In-Patient Service	Public School Workshops

orders, Child Guidance, Speech and Hearing, and Cerebral Palsy serve as consultants as indicated.

The staff of the Study Center works in close cooperation with the State Departments of Public Health, Mental Health, Special Education and Public Welfare, and with the Oklahoma City Public Schools. The Director of the Study Center is a pediatric consultant to the Maternal and Child Health Division of the State Department of Health and follow-up of patients is facilitated by this liaison. The Crippled Children's Unit of the State Department of Public Welfare, whose nurses, social and case workers also provide valuable assistance in follow-up. These follow-up services at the local level can only be effective when there is a well developed liaison with the local public health and welfare workers as well as school personnel.

The actual approach to the mentally handicapped child is illustrated by a brief description of the activities in the various component parts of the Study Center.

STUDY CENTER OUT-PATIENT CLINIC

A complete pediatric evaluation is carried out in the Study Center Clinic which is part of the general Pediatric Out-Patient Clinic. Each clinic patient is "worked up" by a fourth year medical student who continues to follow his patient during subsequent evaluation procedures. Special diagnostic procedures following the general pediatric examination may include psychometric testing, psychological evaluation, social service evaluation of the patient and family unit, diagnostic reading testing, and referral to consultants in Neurology, Psychiatry, Orthopedics, or other disciplines as indicated. A pediatric resident participates in this evaluation. After adequate evaluation, a disposition conference may be held with regard to future planning. These same procedures are carried out for in-patients.

Diagnosis and recommendations are presented and interpreted to the parents, referring physician and referring agency by the Director of the Study Center. Expert consultation in genetic counseling is available from a member of the Department of Pediatrics. Medical recommendations to the referral source are supplemented by detailed social history and recommendations for joint planning with appropriate agencies. Case work support to the families of patients, marital and parent-child counseling is available through the social worker and/or psychologist. Joint planning with agencies and with the schools concerning a specific patient is frequently required and may be quite extensive. The patient is followed by the Study Center staff, including the member of the Out-patient Clinic who originally evaluated him.

In the first year of operation there were 398 patient visits to Study Center Clinic. There were 646 patient visits in 1960 and 621 in 1961. Hospitalization and treatment services as indicated are made available to those in need of financial assistance who meet the eligibility requirements through the Crippled Children's Unit of the Department of Public Welfare.

OTHER STUDY CENTER SERVICES

A common diagnostic problem confronting the pediatrician is differentiation of lan-

---

Authors of this article are both associated with the Department of Pediatrics at the University of Oklahoma School of Medicine.

Sylvia O. Richardson, M.D., Assistant Professor of Pediatrics and Director of the Child Study Center, graduated from McGill University Faculty of Medicine in 1948. She is a member of the Executive Council of the Oklahoma Speech and Hearing Association and a Delegate and a member of the Council to the American Speech and Hearing Association, a member of the Oklahoma County Pediatric Society and the American Association of Advancement of Science.

Harris D. Riley, Jr., M.D., Professor and Head of the Department of Pediatrics, graduated from Vanderbilt University School of Medicine, has ben certified by the American Board of Pediatrics. The Society of Pediatric Research and the American Academy of Pediatrics are among his professional society affiliations.

guage disorders from mental retardation and its associated problems. A large number of children referred to the Study Center because of presumed mental retardation were found instead to have language and perceptual disorders, including specific reading disability. For diagnostic purposes as well as for pediatric teaching, the Evaluation Nursery was included in 1959 and the Dyslexia Clinic was established in 1960.

DYSLEXIA CLINIC

A surprisingly large number of children with specific reading disability are referred to the Study Center Clinic because of presumed mental retardation and/or behavior disturbance. For this reason a clinic for such children—the Dyslexia Clinic—was established and a remedial reading clinician was added to the staff. Here, these children, of normal intelligence, may be identified as having specific sensory-perceptual difficulties interfering with their reading. Usually accompanying these perceptual difficulties is an emotional overlay requiring appropriate therapy. The Department of Psychiatry offers counseling to the parents if indicated while the children attend the Dyslexia Clinic for remedial reading.

The remedial reading teacher is employed half-time by the Department of Pediatrics and half-time by the Oklahoma City Board of Education so that her services are available to the city schools as well as to the Study Center. In this way both case-finding and teacher education are improved. Since therapy is available in the hospital, residents and students in Pediatrics may observe the techniques of remedial reading and follow their patient's progress. Again, in line with our philosophy, it is hoped that this type of training will produce pediatricians who will be more expert in the diagnosis of special learning disabilities and capable of predicting the educational needs and management of these children.

The Dyslexia Clinic is available four mornings a week for therapy; patients work in small groups in hourly sessions. Pupil enrollment has been full and there is a waiting list of those desiring admission.

Acting also as a reading consultant in the Department of Pupil Services with the Oklahoma City Public schools, the reading clinician works cooperatively with their visiting counselors, psychologists, supervisors, principals and teachers. Approximately sixty schools within and ten outside the Oklahoma City Public School System have requested and received the services of the reading consultant. A total of 246 individual reading diagnoses were made in the past year, and a written report was sent to the schools for each child tested.

Training and observation will be available in the Dyslexia Clinic to school teachers by way of workshops for instruction in case finding, developmental and remedial reading techniques and for supervised practice teaching.

EVALUATION NURSERY

In many instances, diagnosis is extremely difficult and tenuous at best within the narrow limits of out-patient visits. As a result, the Study Center established an Evaluation Day Nursery in order to provide a period of observation without hospitalization or repeated out-patient clinic visits. Thus, when a definitive diagnosis cannot be made without extensive study the patient may be admitted to the Child Study Center Evaluation Nursery. The nursery is comprised of pre-school and kindergarten age children with various learning disabilities (and consequent retardation) who present particularly difficult diagnostic or prognostic problems. These children have all received thorough medical and neurological evaluation before admission to the nursery.

A nursery school setting provides maximum opportunity for the observation of sensory, perceptual and intellectual functions of such children and the degree to which therapeutic means may be employed to establish any necessary compensatory skills. It is unfortunate that observational procedures have been neglected by those responsible for the professional training of pediatricians. Too often it is taken for granted that a person academically trained in a specialty knows how to observe. However, observation is not a passive, undirected, or unlearned process. Further, if clinical infer-

ences are to be drawn from observations, then the procedures by which we observe must be made as scientific as possible.

Some of the specific goals in the Evaluation Nursery include the following: (1) Evaluation of peripheral sensory acuity by indicated screening techniques; (2) Estimation of perceptual ability; (3) Measurement of verbal and non-verbal intelligence; (4) Evaluation of receptive and expressive language development; (5) Careful clinical observation of behavior patterns; and (6) Controlled observation of apparent effects of drug therapy. When indicated, pertinent medical or other consultation is obtained.

The present staff of the Evaluation Nursery includes a child developmental specialist and a group of volunteers who have been especially trained. House staff and medical students in Pediatrics, as they rotate through the Study Center, observe in the Nursery under supervision of the staff. They also learn to administer several of the diagnostic tests which will be useful to them in practice. Undergraduate and graduate students in communication disorders and special education also attend the Nursery as part of their course practicum.

Because the Evaluation Nursery is devoted to the total consideration of the young child with a learning disorder, it not only provides a direct service to the patient but contributes to the training of pediatricians, of students of speech pathology and special education and to investigational studies. It has become an available resource for private physicians, educators and institutional directors.

FOLLOW-UP SERVICES

Evaluation and recommendations for therapy, management or educational placement are incomplete and of limited value without adequate follow-up services. The staff of the study center maintains close communication with patients who live in Oklahoma City and County. However, as stated earlier, we rely heavily on personnel in the local communities to maintain contact with patients referred from other parts of the state. Thus, our follow-up services include the cooperative efforts of educators, local Public Health workers and those in the Department of Public Welfare on a statewide basis.

The following quotation from Doctor Bronson Crothers' book, "A Pediatrician in Search of Mental Hygiene" applies to the philosophy of the Child Study Center: "On the whole, my prejudice is towards confining the pediatrician's major interest to the implications of physical disease in various fields. It is quite clear, of course, that disease influences or even abolishes education; therefore, he should be able to keep in contact with teachers so that the child is subjected to the least practicable difficulty in school. He should, of course, be aware of differences of intellectual equipment and should know how to use, personally or by proxy, the psychological tests which are relevant. The social implications can be brought out by rational use of highly competent workers in social service. If he arranges his machinery so that the psychological, educational and the social components can be demonstrated and studied, he will be in a position to teach students that the child is an individual who is developing towards adult life under a series of stresses, only one of which is bodily disease." □

Sylvia O. Richardson, M.D.
800 N.E. 13th, Oklahoma City, Oklahoma

The Postpericardiotomy Syndrome
and Other Major Complications of Open Heart Surgery

ROBERT L. GOSSER, M.D.
Resident in Pediatrics
GLEN G. CAYLER, M.D.*
Associate Professor of Pediatrics and Pediatric Cardiologist
G. RAINEY WILLIAMS, M.D.
Associate Professor of Surgery
GILBERT S. CAMPBELL, M.D.
Associate Professor of Surgery and Chief of Thoracic Surgery

Open-heart surgery for the correction of heart defects now appears to be a safe and generally successful procedure; however, since the complication rate is still quite high, the authors point out the continued need for careful selection of patients for this type surgery.

INTRODUCTION

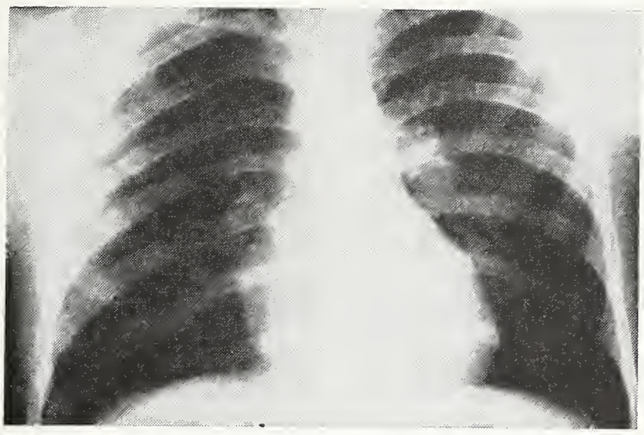
ALTHOUGH THE advent of safe total cardiopulmonary by-pass and open heart surgery has allowed the correction of cardiac defects in patients previously destined to shortened and limited lives, it must be remembered that much remains to be learned about such surgery and consequently complications are still fairly common and modifications of technique are still frequent. A few of the new operative and postoperative problems thus far reported include: (1) heart block,[1] (2) "malignant" bacterial endocarditis,[2] (3) massive hemolysis,[3] (4) air embolus,[4] (5) blood dyscrasias,[5] (6) alveolar collapse,[6] (7) postperfusion digitalis hypersensitivity,[7] (8) ruptured sinus of Valsalva,[8] (9) postperfusion syndrome,[9] and (10) postpericardiotomy syndrome.[10] It is the purpose of this paper to present a typical case of the postpericardiotomy syndrome and to review the etiology, diagnosis, and treatment of this entity. Additionally, the incidence of the postpericardiotomy syndrome as well as other major complications associated with 109 open heart operations on infants and children at the Children's Memorial Hospital, University of Oklahoma Medical Center, during the past three years (1959-1962) will be briefly reviewed.

CASE REPORT

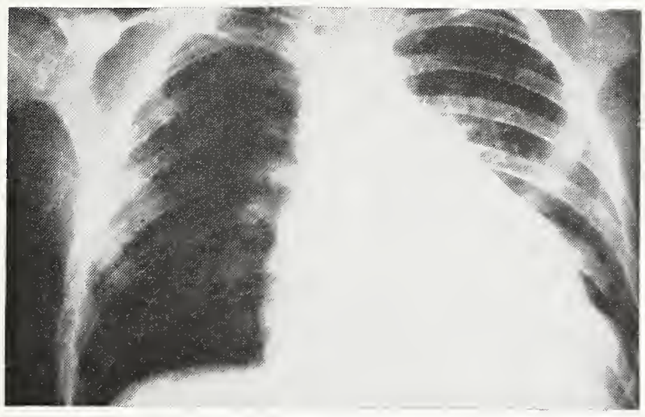
This 13-year-old white boy was admitted to the Children's Memorial Hospital for the third time on 1/7/62, because of fever, cough, and shoulder pain. He had had open heart correction of valvar pulmonary stenosis on 12/20/61, using normothermic total cardiac by-pass. He was on extracorporeal circulation for 17 minutes. The total operating time had been 135 minutes. Except for a low grade fever, his postoperative course was not unusual. Two days prior to the present admission (16 days postoperative) he developed fever, a non-productive cough, and arthralgia involving both shoulders.

Physical examination on admission revealed a pulse rate of 140, regular respirations at a rate of 40, temperature 103.8° F.,

This paper is from Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.
*Advanced Research Fellow, A.H.A., 1959-1961.



Preoperative



Postoperative

Figure 1. Comparison of pre- and postoperative chest roentgens. The roentgen taken 14 days postoperatively shows enlargement of the cardiac silhouette due to pericardial effusion. There is also a left pleural effusion.

blood pressure 110/70. He appeared moderately ill and respirations were very shallow apparently because of pain associated with deep breathing. The lungs were clear to auscultation. There was a grade II systolic ejection murmur at the left base. There was no cardiac failure, arthritis, or pulsus paradoxus.

The initial laboratory work revealed a hemoglobin of 10.9 gm. per cent and a white blood cell count of 12,600 with 77 per cent polymorphonuclears, six bands, and 16 lymphocytes. The sedimentation rate was 54. Six blood cultures were taken and were sterile. The P.P.D. (intermediate strength) and histoplasmin skin tests were negative. The A.S.O. titer was 100, the C.R.P. negative and the S.G.O.T. 13. X-ray of the chest showed an increase in the cardiac transverse diameter and the presence of a left pleural effusion (figure 1). The electrocardiogram showed right ventricular hypertrophy and inverted "T" waves across the entire precordium.

On the second hospital day, a left thoracentesis was performed and 300 ml. of serosanguineous fluid removed. Cultures of this fluid were negative.

A diagnosis of the postpericardiotomy syndrome with both pleural and pericardial effusions was made.

The patient was placed on bed rest and continued to be febrile for the first five days of his hospitalization. Codeine was administered on three occasions for severe anterior chest pain. Chest pain was aggravated by deep breathing and coughing. After the sixth hospital day he showed gradual improvement, became afebrile and was discharged on 1/17/62, to continue limited indoor activities at home.

He was re-admitted to the hospital on 1/21/62, with a two day history of chest pain, left shoulder pain, and fever. At this time he again appeared moderately ill and had splinting of respirations. The pulse rate was 156, the respiratory rate 32, temperature 101.6° F., and blood pressure 100/70. The physical findings were unchanged from his previous examination.

Laboratory studies revealed a hemoglobin of 12.5 gm. per cent and a white blood count of 25,900 with 86 per cent polymorphonuclears. Chest x-ray showed no pleural fluid and a decrease in cardiac transverse diameter. The EKG was unchanged from the previous admission. The sedimentation rate was 43, the A.S.O. 166, C.R.P. negative, and S.G.O.T. 16 units. Three blood cultures were sterile.

He was again placed on bed rest and on the day following admission started on 3,000 mg. of aspirin daily. He continued to have chest pain and a spiking fever to 103° F. The aspirin dosage was increased to 6,000 mg. daily on the fourth day. Within 24 hours he was afebrile and symptomatically improved. The remainder of his hospital course was unremarkable. He remained afebrile and his white blood cell count dropped to 8,450. The sedimentation rate remained elevated. There was a progressive decrease in the size of his cardiac silhouette. He was discharged on 2/7/62. Until present, he has continued on aspirin and limited activities at home and has remained asymptomatic.

DISCUSSION

The case presented was the most severe of six cases of the postpericardiotomy syndrome thus far recognized at this center. Although the syndrome can be associated with marked and prolonged morbidity, in contrast to the original concept[11] it is unlikely to represent a threat to life unless the cardiac defect has not been improved by the surgical procedure. Ito, et al.[10] first postulated, and it is now generally accepted, that the postcommissurotomy syndrome following surgery for rheumatic mitral stenosis and the postpericardiotomy syndrome following surgery for congenital heart lesions are the same. Although the pathogenesis is not completely understood, most workers feel the syndrome is related to an auto-immune reaction associated with the presence of blood or serum in the pericardium.[12] Postinfarction pericarditis[13] and pericarditis in patients following penetrating stab wounds of the chest[14] are probably of similar etiology.

Table 1 lists the clinical and laboratory findings and their approximate incidence in the postpericardiotomy syndrome. Pleuretic chest pain associated with rapid, shallow respiration and cough supression is common and increases the risk of postoperative bronchopneumonia. The syndrome most commonly has its onset during the second postoperative week but may occur many months after surgery. Symptoms usually last one to two weeks but can persist for a month or more. Relapses have occurred as long as a year after surgery. The incidence of the syndrome in patients undergoing open heart surgery has varied from as low as 10 per cent to as high as 40 per cent.[14, 15] Blood and pericardial and pleural fluid cultures are sterile.

Table 1. Postpericardiotomy Syndrome—Clinical and Laboratory Findings.

	Approximate Incidence
1. Symptoms	
Fever	100%
Chest Pain	75%
Cough	50%
Myalgia and Arthralgia	10%
2. Signs	
Tachycardia	75%
Tachypnea	75%
Pleural Rub (usually lt. sided)	50%
Pericardial Rub	35%
Pericardial Tamponade	Rare
3. Laboratory Findings	
Elevated Sed. Rate	90%
Leucocytosis (12,000-30,000)	75%
X-ray (pleural or pericardial fluid)	75%
EKG (pericarditis)	15%

Table 2. Major Complications Observed Following Open Heart Surgery in 109 Infants and Children (1959-1962)*

Complication	#	% Incidence
1. Postpericardiotomy Syndrome	6	5.5%
2. Bacterial Infection	5 (2)	4.6
3. Heart Block	5 (1)	4.6
4. Other Cardiac Arrhythmias	3	3.0
5. Interstitial Pneumonitis	3 (1)	3.0
6. Bleeding	3 (1)	3.0
7. Air Embolus	3 (2)	3.0
8. Massive Hemolysis	3 (1)	3.0
9. Postperfusion Syndrome	3	3.0
10. Pneumothorax	2	1.5
11. Serum Hepatitis	1 (1)	1.0
12. Arterial Aneurysm	1	1.0
13. Sternal Deformity	1	1.0
TOTAL	45 (9)	35% (38 patients)

*Numbers in parenthesis indicate deaths resulting from complications.

Differential diagnosis of the postpericardiotomy syndrome from complicating postoperative pulmonary, pleural, and cardiac bacterial infections is often difficult. Because of the potential serious consequences of delayed therapy for bacterial cardiac infections in the postoperative period, it is likely that many patients with the postpericardiotomy syndrome have been treated for four to six weeks with antimicrobials because of suspected bacterial endocarditis.

Since the etiology of the postpericardiotomy syndrome is not certain, specific treatment is not available. Adrenal steroids have been reported to be of clinical benefit.[15] Some investigators[15, 16] recommend that steroids be used routinely not only for therapy but also as prophylaxis to reduce the incidence of this syndrome. Because of the usual benign nature of this disease, the lack of residual complications and the possible confusion with bacterial infections, the routine use of steroids does not appear indicated and may be hazardous. Elster[17] has felt that prolonged aspirin therapy shortens the duration of symptoms due to the postcommissurotomy

syndrome and may be useful in preventing the disease. Aspirin in high daily dosage was used in two of our cases of the postpericardiotomy syndrome with apparent good response. Aspirin was administered only sporadically in the other four cases of this syndrome of our experience. The others had more benign symptoms of shorter duration.

Our total experience with the postpericardiotomy syndrome as well as other major complications associated with open heart surgery is listed on table 2. The high incidence of major complications in our patients (35 per cent) is not higher than the experience of other groups.[18, 19, 20, 21] Complications have proved fatal in nine of our patients. Although our operative mortality is zero for the correction of uncomplicated intracardiac lesions (62 patients) and only seven per cent for patients with complicated and uncomplicated surgically correctable lesions (99 patients), the high incidence of complications emphasizes the seriousness of this type surgery and makes it apparent that the mere presence of a reparable intracardiac defect is not adequate indication for open heart surgery. Surgical decisions must still be made carefully for each individual patient on the basis of medical versus surgical risk and the expected surgical gain.[22]

SUMMARY

A patient with the postpericardiotomy syndrome is presented and this and other complications following open heart correction of congenital heart defects in 109 infants and children are reviewed. Although open heart surgery now can be performed with a low mortality, the incidence of complications is still high. Many of the complications are poorly understood and unavoidable. Patient selection for open heart surgery therefore must continue to be very critical. At the present time, patients with intracardiac defects causing no significant physiological abnormality probably should not be subjected to surgical correction. □

REFERENCES

1. Lauer, R. M., Ongley, P. A., DuShane, J. W., and Kirklin, J. W.: Heart Block After Repair of Ventricular Septal Defect in Children. Circulation 22: 526, 1960.
2. Heins, H. L., and Linde, L. M.: Bacterial Endocarditis After Surgery for Congenital Heart Disease. New England J. Med. 263: 65, 1960.
3. Keith, H. B., Ginn, E., Willard, G. R., and Campbell, G. S.: Massive Hemolysis in Extracorporeal Circulation. J. Thoracic and Cardiovascular Surg. 41: 404, 1961.
4. Clowes, G. H. A., Neville, W. E., Hopkins, A., Anzda, J., and Simeone, R. A.: Factors Contributing to Success or Failure in the Use of a Pump Oxygenator for Complete By-Pass of the Heart and Lung, Experimental and Clinical. Surg. 36: 557, 1954.
5. Osborn, J. J., MacKenzie, R., Shaw, A., Perkins, H. A. Hurt, R., and Gerbode, F.: Cause and Prevention of Hemorrhage Following Extracorporeal Circulation. Surgical Forum 6: 97, 1956.
6. Dodrill, F. D.: The Effects of Total Body Perfusion Upon the Lungs. Extracorporeal Circulation pg. 327, Springfield, Charles C. Thomas, 1958.
7. Dungan, W. T., Harra, M., Lincoln, B. M., Browning, R. W., and Williams, D.: Digitalis Tolerance Following Extracorporeal Circulation. pg. 25, Soc. Pediat. Res. Abstracts, 1961.
8. Agustsson, M. H., Weinberg, M., Gasul, B. M., Fell, E. H., Arcilla, R. A., Bicoff, J. P., Steiger, Z., and Ina, T.: Aortic-Cardiac Fistulas Following Corrective Operations for Ventricular Septal defects and Tetraology of Fallot. J. Thoracic and Cardiovascular Surg. 43: 166, 1962.
9. Wheeler, E. O., Turner, J. D., and Scannell, J. G.: Fever, Splenomegaly, and Atypical Lymphocytes: A Syndrome Following Cardiac Surgery Utilizing a Pump Oxygenator. New England J. Med. 266: 454, 1962.
10. Ito, T., Engle, M. A., and Goldberg, H. P.: Postpericardiotomy Syndrome Following Surgery for Non-Rheumatic Heart Disease. Circulation 17: 549, 1958.
11. Soloff, L. A., Zatuchini, J., Janton, Q. H., O'Neil, T. J. E., and Glover, R. P.: Reactivation of Rheumatic Fever Following Mitral Commissurotomy. Circulation 8: 481, 1953.
12. Engle, M. A., and Ito, T.: The Postpericardiotomy Syndrome. Am. J. Cardiology 7: 73, 1961.
13. Dressler, W.: The Post-Myocardial-Infarction Syndrome. Arch. Int. Med. 103: 28, 1959.
14. Segal, F. and Tabatznik, B.: The Postpericardiotomy Syndrome Following Penetrating Stab Wounds of the Chest. Am. Hrt. J. 59: 175, 1960.
15. Swan, H., Kortz, A. B., Davies, D. H., and Blount, S. G.: Atrial Septal Defect. An Analysis of 100 Patients Undergoing Open Surgical Repair. J. Thoracic Surg. 37: 52, 1959.
16. Dresdale, D. T., Ripstein, C. B., Guzman, S. U., and Greene, M. A.: Evaluation of Cortisone and ACTH as Prophylactic and Therapeutic Agents in Postcardiotomy Syndrome in Patients with Rheumatic Heart Disease. Circulation 12: 695, 1955.
17. Elster, S. K., Wood, H. F., and Seely, R. D.: Clinical and Laboratory Manifestations of the Postcommissurotomy Syndrome. Am. J. Med. 17: 826, 1954.
18. Wood, P.: Complications of Open Heart Surgery. Children's Memorial Hospital Lectures on Pediatric Cardiology, Boston, May 6-7, 1959.
19. Kirklin, J. W., McGoon, P. C., Patrick, R. T., and Theye, R. A.: What is Adequate Perfusion? Extracorporeal Circulation, pg. 125, Springfield, Charles C. Thomas, 1958.
20. Lillihei, C. W., Warden, H. E., DeWall, R. A., Stanley, P., and Vario, R. L.: Cardiopulmonary By-Pass in Surgical Treatment of Congenital or Acquired Cardiac Disease. A.M.A. Archives, Surg. 75: 928, 1957.
21. Callaghan, J. C., Despres, J. P., and Benvenuto, R.: A Study of 60 Deaths Following Total Cardiopulmonary By-Pass. J. Thoracic and Cardiovascular Surg. 42: 489, 1961.
22. Taussig, H. B.: On the Selection of Patients for Surgical Repair of Congenital Defects. Circulation 18: 321, 1958.

800 N.E. 13th, Oklahoma City, Oklahoma

*Management of Congenital Heart Disease in Infants**

GLEN G. CAYLER, M.D.**

IN THE PAST few years tremendous strides have been made in the management of congenital heart disease; however, most of the progress has been made in the age group over two years and relatively little attention has been paid to this problem in children less than two years of age. Accurate clinical diagnosis of infants with congenital heart disease in contrast to older children is more difficult since the physical findings of heart disease in this age period are commonly atypical and lesions are more often multiple and complex. Also in contrast to older children, the natural attrition rate of congenital heart disease is very high during the first two years of life. It is clear that if major advances are to be made in decreasing the mortality rate of congenital heart disease, further progress must be made in the diagnosis and treatment of infants and small children since approximately 35 per cent of infants born alive with heart anomalies expire under the age of two months and 50 per cent expire before the end of the first year.

In the past, enthusiasm for catheterization and angiocardiographic studies in these small patients had not been great because: (1) the morbidity and mortality of better diagnostic procedures were high; (2) diagnosis often was not accurate even with these special studies; (3) surgical therapy was possible only in a small per cent of cases. During the past five years great progress has been made both in the cardiac diagnostic and surgical fields, so that it is doubtful if any of the above three objections to early diagnostic tests in infants with congenital heart disease are still valid. The results from cardiac catheterization of over 100 infants studied at the University of Oklahoma Medical Center during the past three years show no mortality, minimal morbidity, and accurate diagnosis in over 90 per cent of the cases.

It is no longer true that only a small number of infants dying from congenital heart disease can be offered effective surgical therapy. Statistics show that only ten to 20 per cent of cardiac anomalies causing death in infancy are still truly inoperable. Progress toward increasing the number of lesions which can be successfully palliated or totally corrected is constantly being made.

It is therefore apparent that the physician can no longer be satisfied with a non-specific diagnosis of congenital heart disease during infancy. He must know the type and severity of heart defect present in order to decide intelligently whether or not early surgical intervention will be necessary in order for the infant to survive. When cardiac catheterization studies are necessary to determine accurately the type and severity of the cardiac lesion, this procedure can now be performed with small risk and with the expectation of an accurate diagnosis in approximately 90 per cent of patients.

The philosophy toward infants and young children with heart disease should be changed from "watch and wait" to "wait only when we are sure there is nothing better to do."

* * *

Two booklets on congenital heart disease, one for physicians and one for the parents of children with this condition, are available by writing to the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma.

*From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.
**Associate Professor of Pediatrics, University of Oklahoma School of Medicine.

Dean's Message

In the interim between formal sessions of our State Legislature, the "business" of government is given continuing perusal by interim committees of the Legislative Council. By means of this device, the problems that exist within the various functions of state government can be reviewed and analyzed in considerable detail. As a consequence of such reviews, recommendations for corrective and needed legislation can be made by the interim committee to the legislature itself.

The process resembles the firing of a missile, with which there is much noise, much excitement and much smoke, but with ultimate success dependent upon preparation in advance.

During the current interim, the Committee on Appropriations and Budget visited the campus of every component institution of higher education in Oklahoma. The tour concluded with a visit to the campus of the Medical Center in Oklahoma City. In addition to members of the committee, legislators from Oklahoma County, Chancellor E. T. Dunlap and Mrs. Jewell Ditmars from the State Regents for Higher Education and Doctor Mark Johnson of the University of Oklahoma Regents were present.

After a word of welcome to the committee by President George Cross and the Dean, the academic and fiscal affairs of the School of Medicine and the University Hospital were reviewed in detail. A luncheon, short tour and review of the capital construction and modernization requirements of the Center filled out the schedule for the visiting legislators.

At the conclusion of the visit, individual members of the inspecting team were most complimentary of the manner in which the School of Medicine and its hospitals have risen to the challenge of providing high quality medical education and health services for the people of the state in spite of pitifully inadequate financial support.

The chairman of the committee, Mr. Lou Allard of Drumright, said it was his opinion that the Medical Center was more in need of increased state support for land and buildings than any other of the state institutions of higher learning.

He said his committee would make a strong recommendation to the next legislative session to this effect and that if additional appropriated moneys were not available, he would urge that they be obtained by a separate bond issue.

The Medical Center family is grateful for this recognition of its efforts by responsible leaders in state government. □

Mark R Everett

*On the Nature of Progress**

CARLETON B. CHAPMAN, M.D.
Professor of Medicine, Southwestern Medical School, University of Texas, Dallas, Texas

"THE BUSINESS of America is to progress; and Progress *is* the business of America. We are a nation forever on the march." Thus Henry Luce restated a dominant American attitude in 1954,[12] echoing what Shafer calls "the American heritage of hope."[19] In the period from Waterloo to Sarajevo, " . . . the belief in the contingent possibility of progress was transformed into a belief in the inevitability of progress,"[5] leading, in the United States, to the nearly universal acceptance of progress as the rule of life.[21] Robert Ingersoll, America's most famous nineteenth century agnostic, paused in his battles with the clergy long enough to declare:

> "We are standing on the shore of an infinite ocean whose countless waves, freighted with blessings, are welcoming our adventurous feet. Progress has been written on every soul. The human race is advancing.
>
> "Forward, oh sublime army of progress, forward until law is justice, forward until ignorance is unknown, forward until there is a spiritual or temporal throne, forward until superstition is a forgotten dream, forward until the world is free, forward until human reason, clothed in the purple of authority, is king of kings."[10]

No one today would be likely to address an audience in such florid and rhapsodic terms but, basically, Henry Luce and Robert Ingersoll were preaching the same gospel. There have, to be sure, been discordant voices here and there, uneasily urging a more critical attitude toward progress. Norbert Wiener, for example, rather cynically put it this way:

> "The education of the average American child of the upper middle class is such as to guard him solicitously against the awareness of death and doom. He is brought up in an atmosphere of Santa Claus; and when he learns that Santa Claus is a myth, he cries bitterly. Indeed, he never fully accepts the removal of this deity from his Pantheon and spends much of his later life in search for some emotional substitute.
>
> "The fact of individual death, the imminence of calamity, are forced upon him by the experience of his later years. Nevertheless, he tries to relegate these unfortunate realities to the rôle of accidents, and to build up a Heaven on Earth in which unpleasantness has no place. This Heaven on Earth consists for him in an eternal *progress,* and a continual ascent to Bigger and Better Things."[22]

He then went on to point out that the Mad Tea Party from *Alice in Wonderland* might well illustrate one of the principles underlying the critical American attitude to-

*Address presented at the Initiation Banquet of Alpha Omega Alpha, University of Oklahoma School of Medicine, April 4, 1962.

ward progress. At the tea party, the Mad Hatter tells Alice:

"It is always tea-time with us here . . . and we've no time to wash the things between whiles.'

'Then you keep moving around, I suppose?' said Alice.

'Exactly so,' said the Hatter; 'as the things get used up.'

'But when you come to the beginning again?' Alice ventured to ask.

'Suppose we change the subject,' the March Hare interrupted, yawning . . ."[4]

That there was progress of a sort at the tea party there can be no doubt. But the Mad Hatter and the March Hare (the Dormouse was there too) had nothing more serious to anticipate than a stack of dirty dishes. With us, such blind definitions of progress can predictably lead to a very different sort of result but before attempting to look at the possibilities, it may be useful to consider the notion of progress in historical perspective.

When I first undertook to look into the concept of the inevitability of progress, I assumed that few writers would have attempted to deal with it; actually, a great many nineteenth and twentieth century authors have approached the topic head-on. But if there are classical writings on the topic, I am unable to find them. To the ancient Greek, civilizations moved cyclically, rising from barbarism to a golden age, then declining again. Their idea of immutable destiny made it impudent for mere man to attempt to alter by his own efforts the fixed order. Plato thought the cycle was about 72,000 years in total length.[16] In Roman times Seneca spoke of *progress in knowledge* and Lucretius[13] traced man's progress from an animal-like existence to the state of culture reached about Caesar's time.

All this, however, is relatively unimportant compared to the sequence of events that began when Constantine was converted to Christianity sometime between 312, when he saw the flaming cross in the sky, and 323, when he defeated Licinius. Constantine was, in all probability acting from expediency rather than conviction; his example, in any case, gave rise to the view that the Christian God accorded material and political progress to those who accepted Him. Bishop Melito of Sardis and Tertullian are said to have gone so far as to claim that the progress and prosperity of Rome, beginning with the reign of Augustus, was attributable to the Christian God's favor.[15] Eusebius (260-340) also held that, under divine guidance, man had progressed mightily since pre-Christian days. There were those, however, who held that Rome's pagan gods had brought her to glory and that Christian impudence would bring disaster. Highly symbolic and ominous to the supporters of the pagan gods was the final removal, at Christian insistence, of the statue of Victory from the Roman Senate, in 382. Less than 20 years later Alaric took the city and the young Christian Church, naturally enough, received the blame. It was probably the Church's most dangerous moment and it was the resolute genius of Augustine, Bishop of Hippo (in North Africa) that saved her. He did it by providing a definition of Christian progress according to which Rome, by her wickedness, had brought about her own destruction. In *The City of God*,[1] he held that secular progress was not the result of Christianity and that the vicissitudes of Rome were according to God's ordering of things and times, a massive planning process that is hidden from mere mortals. History, to Augustine, was a undirectional linear process beginning with the Creation and destined to end with the final judgment, it's only goal being the salvation of the individual, conceived in sin and unsalvageable by his own efforts. In the City of God, as opposed to the city of man, there was to be a gradual revelation of divine truth but the attitude toward material progress was decidedly monastic.

It was a massive theological effort, laid out mainly along historical lines, and destined to become one of the most influential books ever written. The Augustinian definition of spiritual, as opposed to intellectual or material, progress helped to save the church and to determine the history of the Western World at least until the seventeenth century. J. B. Bury,[2] with characteristic thoroughness, traces the intervening developments but he, and most later writers, are agreed that Condorcet was the first to elevate the notion of progress to the status of a system of social philosophy. The *philosophe* sought

to discover laws of progress, just as Newton had discovered laws of physics, and to build a science of human behaviour on them.[6, 18] It was a far cry from the gloomy early Christian view based on the principle of original sin and from the stand taken later by the fanatic Calvin. To Condorcet, progress was inevitable, its only variable being its rate. It seems incredible that he constructed this optimistic theory while hiding from the wrath of Robespierre (in 1793) in the darkest days of the French Revolution. Condorcet had far-reaching influence and it was quite appropriate that Bury should dedicate his own book on progress to him.

The very new United States of America obviously preferred the Condorcet view to the Augustinian or Calvinistic in spite of the fact that the country was, at the turn of the eighteenth century, nominally protestant and largely fundamentalist. Bury, speaking of nineteenth century Britain, could as well have been describing the United States when he said: "Belief in personal immortality [and salvation] is still very widely entertained but may we not fairly say that it has ceased to be a central and guiding idea of collective life, a criterion by which social values are measured?" From the beginning our nation, with little tradition to overcome and enormous resources at hand, was in process of becoming a materialist country. The gloomy Augustinian view did not seem to fit the facts and our general conduct was much more that of the city of man than that of the City of God. Walt Whitman became the poet of Hope and Progress toward mid-century and the Horatio Alger legend possessed enough visible substance to fire the imagination of innumerable American schoolboys. No one seems to have attempted to define the American idea of progress but in one respect it was like Augustine's; it was linear in that the process went steadily onward and upward to some indefinite and infinitely distant point. Also like Augustine's, it was essentially anti-intellectual, uncritical, and dogmatic, directed as it was toward the preservation of the American Way of Life, also largely undefined. Men like Ingersoll glorified the dream but it would be fatuous to believe that the great mass of the nation's population viewed progress in such an exalted manner. To most, it was comparable to a religious faith the end result of which was material comfort and security, *not* spiritual salvation and immorality. Vannevar Bush said that the first World War " . . . shook our optimism, the depression shook it still further, and the second World War nearly destroyed it . . ."[3] No doubt this is partly true but our national attitude is still one of uncritical optimism based on a definition of progress provided more by Madison Avenue than by historical considerations or by abstract moral or spiritual values. We seem to have overshot reasonable recovery from the pessimism that followed World War II. Once again, we are inclined to believe that everything must of necessity come out all right. Before we get all the way round the tea table, some miraculous agency will have washed the dishes and replenished the tea and cakes. Just so, before we use up all our coal and oil, we shall have developed yet more abundant sources of power; as for water supplies, why worry? Are we not developing methods for making fresh water from ocean brine? Progress, then, is that godlike power that replenishes or points out new resources. The Mesabi range in Minnesota, formerly our prime source of ore, is now stripped of its top-grade ore but again, why worry? We are developing ways of extracting iron from very low grade taconite which is present there in great abundance. As for food, there cannot possibly be any cause for alarm in this country; the size of our population has not yet begun to catch up with our production of basic foods. And why worry about the dreary warnings of various population experts who tell us that four-fifths of the world's population are underfed. Surely, all the rest of the world needs to do is to farm as efficiently as we do in the United States. Our gross national product, we are assured, is *bound* to rise every year; so is our per capita income, our annual production of automobiles, washing machines and television sets.

Yet one does not have to understand the physical concepts of *equilibrium* and *entropy* to know that we cannot, in this country, go on increasing our gross national product, our

output of automobiles, and our consumption of natural resources every year. There will inevitably be a leveling off one day along with which will come a vast need to readjust our national attitudes toward progress. True, we can convert salt to fresh water and low-grade taconite to steel, but these and other processes, on which we may one day be very dependent, will probably gobble up so much of our money that relatively little may be left over for the various sorts of consumers' goods Madison Avenue has brought us to equate with Progress and Success. What will be our attitudes when we are required to conserve such essentials as food, water, fuel and clothing the current abundance of which makes us forget that there have ever been hard times? Is our nation stable enough to endure such vicissitudes? I think the answer is yes, that our people are more adaptable than many of our leaders believe, and that a willingness to redefine progress is the factor that will enable us to survive, emotionally as well as physically.

During the Great Depression, beginning about 1930, our country did indeed accept privation up to a point. People made automobiles last many years; lavish living of all sorts was very rarely in evidence. But it was certainly a very troubled time for us and by March 4, 1933, many economists now tell us, the country was verging on collapse. Again, during World War II the country pulled in its belt and did without many consumers' items which are today in abundance. But, one must admit, our nation took to rationing grudgingly and rather suspiciously. Rigid insistence for so many years on the purely expansionist definition of progress may have modified our adaptability as a nation and may well be doing so still.

It may be that since 1945 we have, in our anxiety, retreated into a sort of national economic infantility and that we require the unending succession of new models every year, escapist TV programs, and lurid literature to ease the pain. This, to the extent that it characterizes us, is not progress; it is retrogression. Add to all this the simple fact that our educational system has fallen sadly behind our national need and we emerge with a situation of which we can hardly be proud.

It seems to me the founders of the Republic of Texas had a more balanced view of progress than many of our present-day leaders. In 1838, President Lamar told the Texas Congress that " . . . cultivated mind . . . , guided and controlled by virtue, is the noblest attribute of man. It is the only dictator that freemen acknowledge, and the only security that freemen desire . . . [Without adequate education] war would be conducted without the science necessary to insure success . . . ; and peace would be joyless because its train would be unattended by that civilization and refinement which can alone give zest to social and domestic enjoyments.—And how shall we protect our rights if we do not comprehend them? And can we comprehend them unless we acquire a knowledge of the past and present conditions of things, and practice the habit of enlightened reflection . . . ?" He then urged the Congress to establish a university, " . . . a great moral and intellectual edifice which will . . . be hailed as the chief ornament and blessing of Texas."[11] Mirabeau Buonaparte Lamar, incidentally, was a Georgian who came to Texas in 1835 and was elected president of the Republic in 1838. It was he who caused Austin to be built in 1839 and it was he who, by his unrelenting pressure on the Texas Congress and population, got the state educational system started. His statement about the cultivated mind, approximately rendered into Latin, is now the motto of the state university (Disciplina praesidium civitatis). Please note that President Lamar characterized the cultivated mind, kept to its course by virtue, as the goal to be sought; he made no mention of a technology to be served or of material progress as the chief reason for building a university. There can be little doubt, however, that he had a fair concept of the power, economic and otherwise, of solid education in depth.

Parenthetically, I should add that the University of Texas didn't really get going until 1881 when the cornerstone of the first Main Building was laid. At the time, the President of the Board of Regents, Dr. Ashbel Smith, supplied the following admonition: "Smite the rock with the rod of knowledge and fountains of unstinted wealth will gush forth."[20] Presumably the young university

heeded his advice and Santa Rita, the Saint of the Impossible, finally looked with favor on the effort. On May 28, 1923, at about 6:30 in the morning, the Santa Rita oil well in the Big Lake Oil Field blew in. Since it happened to be on university lands, the university's physical needs were quickly eased. This was progress without a doubt and wonderful progress at that. But it has not even yet made us a truly great university. We are working hard at it, and there are some encouraging signs, but the people of Texas really ought to demand that we in the university explain why we have not gone ahead much faster. Why is the University of Texas not yet the world's greatest institution of higher learning? These, unfortunately, are questions most of our citizens are not yet prepared to ask. They are still listening too often to the voices of arrogantly ignorant men, loudly proclaiming the alleged virtues of ignorance, ridiculing college students and faculties, and upholding the examples of millionaires who never went beyond the third grade. They point to irreversible material progress and support the construction of super-highways and airports abundantly; as for building universities, *that* is for someone else and, in any case, isn't very important. And to give money to help the Public Schools is utterly unthinkable. This is an exaggeration, of course, but not very much of one. There is no denying that business and material enterprise must prosper if our educational plant is to be built up but I submit that things are badly out of balance, largely—or perhaps all—because we define progress solely in a material sense. Defining it in an intellectual sense immediately provokes ridicule or, worse, denunciation. General Eisenhower saw fit in 1954 to refer to an intellectual as "a person who takes more words than are necessary to say more than he knows."[9] Perhaps, but " . . . in our civilization," says Curti, "we . . . have tended to set up material well-being as the criterion of greatness. When intellectual endeavor has obviously promoted material well-being, it has generally been recognized and rewarded. But when it has *seemed** to threaten established ways . . . , it has often been resented and disparaged."[7] All of which brings us nearer to a recognition of the perennial conflict between the theoretician and dreamer, on the one hand, and the practical man, on the other. My thesis is simply that in our great country a restoration of balance between the two is long overdue and must not be delayed any longer. There are efforts, in the Southwest, to reestablish sound scholarship as honorable enterprise. In Dallas, Doctor Lloyd Berkner of the Graduate Research Center, proposes to step up our output of Ph.D.'s in order to attract industry to the area. He leaves the strong inference that NASA elected to settle in Houston rather than Dallas because Houston's Ph.D. brainpower is greater than Dallas'. Doctor Berkner reasons that our country needs industry and industry needs Ph.D.'s; so we must turn them out in sufficient quantity. So many pounds of Ph.D.'s, in other words, for so many millions of dollars worth of industry. In fairness, I don't really disagree with Doctor Berkner's primary thesis; but it is, to my mind, an incomplete statement of the purpose of education and will not, I believe, ever raise us much above the level of the mediocre. Where, if these are to be our guiding principles, are our ministers, our lawyers sufficiently educated to ponder the social implications of the law, our diplomats and foreign service officers to come from? More important, where are our *dreamers* to come from or, for that matter, to go to? The incomplete statement ignores the fact that our strength as a nation and our industrial establishment both depend ultimately on a type of progress that is *not* immediately material, a point with which Doctor Berkner is, I am sure, in complete agreement.

There is no need to belabor these points further, or to defend the position of the conscientious intellectual or unreconstructed bookworm. They are essential folk and in some sense the salt of the earth. "No scientist or scientific philosopher," says Agnes Meyer,[14] "would claim that intelligence, reason, and the scientific approach will ever wholly dominate the course of history. For the elements of chance, the unforeseen events, the pressures and passions of group life can never be wholly eliminated from hu-

*Italics mine.

man activities. Thus human wisdom, knowledge, and intelligence will not necessarily save us from destruction and ruin. But if they are not sufficient, they are at least the essential conditions of progress." To this I, who count myself an unreconstructed egghead, can only add a fervent *amen*.

And now, what has all this to do with medicine? The answer is *everything*. In the first place, physicians, like any other citizen must concern themselves with our national well-being. In the second place, medically-trained folk need to look with extreme acuteness at the ruling definition of progress. Some weeks ago I was invited to testify as a citizen, at my own expense, before a congressional subcommittee dealing with the appropriation for the National Institutes of Health. The acting chairman of the committee seemed impatient with my carefully prepared testimony and when I had finished, he requested that I submit a list, in lay language, of striking advances in medicine during the course of the past year. Let me digress, for a moment, on this business of lay language. When are we going to rebel against this tyranny of the simple word? Why should not the laymen meet us halfway and look up a semi-medical word now and then? If we always meet this degrading demands for words of one or two syllables we shall very rarely be understood and will be doing nothing to relieve our national verbal poverty. But back to medical progress: what indeed are the great advances of the last year? Have we solved the problem of aging, the cancer question, or the genesis of our national neurosis? One is hard put to it to identify *any* miraculous advance and the conscientious physician must have the courage to deny that every year brings world-beating advances in medicine. Actually, they are few and far between. There are probably no more than a dozen in the twentieth century to date. Rash statements and unfounded beliefs about medical advances are one aspect of our national delusion about progress that the physician ought to combat as best he can. Another, and more important, aspect is implicit in Dubos' statement: "Threats to health are inescapable accompaniments to life. . . . Unless men become robots, their behaviour and environment fully controllable and predictable, no formula can ever give them permanently the health and happiness symbolized by the contented cow."[8] In other words, a medical millenium and physical immortality are not to be the fruits of medical research. Each medical advance generates a new set of problems. "Who could have dreamt a generation ago that hypervitaminoses would become a common form of nutritional disease in the Western World? That the cigaret industry and the use of x-rays would be held responsible for the increase in certain types of cancers? That the introduction of detergents and various synthetics would increase the incidence of allergies? That advances in chemotherapy . . . would create a new staphylococcus pathology? . . . That patients with all forms of iatrogenic diseases would occupy such a large number of beds in the modern hospital?" At the very least, again quoting Dubos: " . . . it will become increasingly difficult for society to manage a proper balance between its intake of tranquilizers and of energizers."

From all this we may reasonably conclude that medicine is not likely to research itself out of a job. We must also see that the public is protected from the degrading influence of the belief in the ultimate abolition of disease. And finally, our profession must be willing to enter many areas that are not classically a part of medicine. It has done so in the past and will undoubtedly have to do so again. What profession, or group of professions, should be looking into the effects of the development of suburbia or of air pollution or of fraudulent medicaments? In short, medicine needs to ". . . achieve a humanism that is truly scientific and a science that is truly humane."[14]

Finally, consider if you will, the sobering and even chilling declaration with which Dubos closes his look at the future of medicine: "Medical advances do not arise in a social vacuum. They are products of the sparks between the scientific knowledge of the time and the demands of the community. But what the community demands is determined to a large extent by publicity, apparent or hidden—in this case by the implied promises of medical science. We must beware lest we give the illusion that health will be a birthright for all in medical Utopia,

or a state to be reached passively from effortless directives given by physicians or from drugs bought at the corner store. In the real world of the future . . . health will depend on a creative way of life, on the manner in which men respond to the unpredictable challenges that continue to arise from an ever changing environment."

And to close—let me acknowledge my alignment with René Dubos, a magnificent Intellectual and Egghead, in so many words: to me, he is saying that Medicine must stop being a Tranquillizer Profession, and turn to its proper job of diminishing ". . . the awful sum of human misery."[17] It must take up its burden and become the twentieth century *voice crying in the wilderness.* For who else is—or can be—so concerned with the welfare of Homo sapiens? □

BIBLIOGRAPHY

1. Augustine, Aurelius: The City of God. Translated by Marcus Dods. New York, The Modern Library, 1950.
2. Bury, J. B.: The idea of progress. An inquiry into its origin and growth. London, Macmillan and Co., 1920.
3. Bush, Vannevar: Science and progress? American Scientist 43: 241-258, April, 1955.
4. Carroll, Lewis: Alice in Wonderland. New York, Modern Library, Undated.
5. Chambers, C. A.: Belief in progress in twentieth-century America. J. Hist. Ideas 19: 197-224, April. 1958.
6. Condorcet, Marie-Jean-Antoine-Nicolas Caritat, Marquis de: Esquisse d'un Tableau historique des progrès de l'esprit humain. Paris, 1795.
7. Curti, Merle: American Paradox: the conflict of thought and action. New Brunswick, Rutgers University Press, 1956.
8. Dubos, René J.: Medical utopias. Daedalus 88: 410-424, Summer, 1959.
9. Eisenhower, Dwight: New York Herald Tribune, September 25, 1954.
10. Ingersoll, Robert G.: The works of Rogert G. Ingersoll. New York, Dresden Publishing Co., 1909. Vol. IV, pages 423-476.
11. Lamar, Mirabeau Buonaparte: Papers. Edited by Charles Adams Gulick, Jr., and Katherine Elliott. Volume 2, pages 348-349. Austin, A. C. Baldwin and Sons, 1922.
12. Luce, Henry: The promised land. New Republic 131: 19-21, December 6, 1954.
13. Lucretius, Titus Carus: The nature of the universe. Translated by R. E. Latham. London, Penguin Books, 1951.
14. Meyer, Agnes E.: Education for a new morality. New York, The MacMillan Company, 1957. Pages 4-5.
15. Mommsen. T. E.: St. Augustine and the Christian idea of progress: the background of the City of God. J. Hist. Ideas 12: 346-374, June, 1951.
16. Plato: The Dialogues. Translated by B. Jowett. New York, Random House, 1937. Vol. 2, 283-340 (Statesman).
17. Russell, Bertrand: The impact of science on society. New York, Simon and Schuster, 1953.
18. Schapiro, J. Salwyn: Condorcet and the rise of liberalism. New York; Harcourt, Brace and Company, 1934.
19. Shafer, Boyd C.: The American heritage of hope, 1865-1940. Mississippi Valley Hist. Rev. 37: 427-450, December, 1950.
20. Smith, Ashbel: Address at the laying of the Cornerstone of Main Hall of the University of Texas, November 17, 1882. Austin, University of Texas Catalogue, 1883.
21. Teggert, F. J.: The Idea of Progress; a Collection of Readings. Revised edition. Berkley, University of California Press, 1949.
22. Wiener, Norbert: The human use of human beings. Cybernetics and society. Second edition. Garden City, Doubleday Anchor, 1954.

Eighth Annual

SOUTHEASTERN OKLAHOMA CLINICAL SYMPOSIUM

Saturday, July 28, 1962 **The Aldridge Hotel**

McALESTER, OKLAHOMA

GUEST SPEAKERS

Harris D. Riley, Jr., M.D.
Oklahoma City
Pediatrics

J. P. Sanford, M.D.
Dallas, Texas
Internal Medicine

John B. Nettles, M.D.
Little Rock, Arkansas
OB-GYN

F. H. Krock, M.D.
Fort Smith, Arkansas
Chief of Staff, Holt-Krock Clinic

Samuel B. Johnson, M.D.
Jackson, Mississippi
Opthalmology

A. Keller Doss, M.D.
Fort Worth, Texas
Urology

H. K. Stauss, M.D.
Jackson, Mississippi
Thoracic Surgery

Registration . . . . . 9:00 a.m.
Dinner and Entertainment . . 7:00 p.m.

Approved for six hours Credit (Category II), AAGP.

No fee is required for attendance at scientific sessions, luncheons or dinner.

HANDLING THE PSYCHIATRIC EMERGENCY

Proper management of a psychiatric emergency requires the ability of the physician to recognize its existence and to selectively employ the appropriate action.*

Simply talking with the patient will frequently abate the tempest, but because the physician speaks from a position of authority he must use care, for his words are double-edged and if interpreted by the patient as hostile, they may inflame rather than calm the situation.

When direct physical intervention is required, the physician should use medically-trained personnel whenever available, and these in adequate numbers. A wise rule calls for one person for each extremity plus one extra. The mere presence of sufficient reinforcements may make their use unnecessary.

The employment of drugs to manage a hyperactive patient is generally limited to parenteral medication with one of the phenothiazines or barbiturates. Although the most violent patients may be thus controlled, such treatment should be used only as a temporary measure until definitive therapy can be instituted. Maintaining a patient in such a state of narcosis for a prolonged period presents numerous medical hazards.

Every physician should be thoroughly familiar with the psychiatric facilities available to his patient, and the means of effecting their entrance to such facilities. Although primary psychiatric hospitals may be distant, many community hospitals are now providing suitable accommodations for the acute psychotic patient.

Various categories of psychiatric emergencies and their proper management are described.

(REVIEWER'S NOTE: No matter what type of practice he pursues, sooner or later every physician is called upon to manage a psychiatric emergency. For the majority of us, however, these represent only infrequent occasions in our professional work, and we are then, sometimes understandably perplexed. Doctors Shurley and Pokorny have provided much sensible counsel in a very few pages. Their essay is recommended to all physicians.)

*Handling the Psychiatric Emergency. Jay T. Shurley and Alex D. Pokorny. Medical Clinics of North America 46: 417-426 (March) 1962.

MECHANISM OF HYPERTENSION

Although conclusive proof is not currently at hand, there is impressive evidence that the basic mechanism by which hypertension is expressed lies in the response of actomyosin to an abnormal concentration of electrolytes within the arteriolar wall.* Shortening of the actomyosin produces contraction of the smooth-muscled vessel wall thereby increasing peripheral resistance and raising the blood pressure.

Four areas of evidence are presented. First, almost all patients showing raised blood pressure as a result of diseases ranging all the way from essential hypertension to vitamin D intoxication can be shown to have some abnormality of water or electrolyte balance. In most instances, the cause of the electrolyte abnormality is known; for example, the patient having chronic glomerulonephritis has acidosis, a lowered serum sodium, etc., because of his renal insufficiency. In some instances, however, our knowledge of the basic defect is less clear.

The second area of evidence is gathered from studies in which deliberate alterations of water and electrolyte balance were made. Feeding large amounts of salt to rats or chickens will eventually produce hypertension, which can in turn be mitigated by increasing the animals' intake of potassium. The administration of any of the benzothiazide diuretics will increase the urinary excretion of water, sodium, potassium, magnesium, and chloride and reduce the blood pressure of most hypertensives.

Third, the analysis of renal artery sections from patients dying with and without hypertension showed there was an increased concentration of water and sodium in material obtained from hypertensives as compared to that from the non-hypertensive group. Further, the induction of hypertension by the infusion of norepinephrine, angiotensin, or vasopressin is accompanied by a drop in the potassium and a rise in the sodium concentration of the vessel wall.

Finally, the measurement of small vessel pressures in experimental animal preparations will show that vessel walls dilate and contract in response to the variation in the concentration of naturally occurring ions in the blood.

(REVIEWER'S NOTE: Doctors Haddy and Overbeck have assembled an impressive argument for the theory set forth. Almost all physicians treating a patient for "high blood pressure" have come to recognize they are treating a physical finding which seems to arise from many causes. It is with some sense of relief, then, to find such persuasive evidence for a common denominator in state associated with such a variety of unrelated diseases. The reader of this article will almost certainly discover his perspective of hypertension has been enlarged and with that the possibility to treat his patients definitively.)

*Electrolytes—The Common Denominator in Hypertension? F. J. Haddy and H. W. Overbeck. Journal of the Arkansas Medical Society, 58: 477-481 (April) 1962.

Recent Publications from The Medical Center

Purified Poliomyelitis Vaccine—Clinical Appraisal. C. Weihl, D. Cornfeld, H. D. Riley, Jr., and H. Cramblett. Journal of the American Medical Association **176:** 409 (May 6) 1961.

Failure of Kanamycin in the Treatment of Typhoid Fever. Harris D. Riley, Jr., and Nell J. Ryan. Journal of Pediatrics **59:** 249 (August) 1961.

Adjustment Problems of the Aged. T. Glyne Williams. Journal of Rehabilitation **27:** 24 (January-February) 1961.

Plasma Nonesterified Fatty Acid Levels in the Human Neonate. D. K. Keele and J. L. Kay. Proceedings of the Southern Society for Pediatric Research. Nov. 17-18, 1961.

DuVal Named Assistant Director At OU Medical Center

Merlin K. DuVal, M.D., professor of surgery, has been named to the new position of assistant director of the University of Oklahoma Medical Center.

He will assist Mark R. Everett, Ph.D., director and dean, with the added responsibilities placed on the office of director as the result of Medical Center growth in recent years.

M. K. DuVAL

Doctor DuVal has served as coordinator of Medical Center development since 1960. In the new administrative post he will continue to be concerned with developmental programs and liaison work with the Alumni Association, in addition to other problems delegated by the director. He will retain his appointment in the Department of Surgery, where he also serves as vice-chairman.

A member of the faculty since 1957, Doctor DuVal came here from the State University of New York College of Medicine, Brooklyn, where he taught in the surgery department three years. He is a former Markle Scholar.

The surgeon was graduated from Cornell University Medical College in 1946. He took a surgical internship at New York Hospital and a rotating internship at Roosevelt Hospital, New York City, then completed a four year residency in surgery at the Bronx VA Hospital.

Doctor DuVal is president-elect of the Oklahoma Surgical Association. Active in civic and community affairs as well as professional organizations, he is a member of the Governor's Commission for Higher Education and the Board of Directors of the Oklahoma City Chamber of Commerce. He is president of Faculty House. □

Aesculapian Awards Go To Daron and Simon

G. H. Daron, Ph.D., professor of anatomy, and Jimmy Simon, M.D., assistant professor of pediatrics, have won the first annual Aesculapian Awards established by the Student Council of the University of Oklahoma School of Medicine to honor contributions and dedication to teaching.

Two awards will be given each year, one to a member of the pre-clinical faculty, as chosen by the second year class, and one to a teacher in the clinical years, to be selected by the fourth year class.

Plaques will bear the names of this and subsequent year honorees and have been placed at the entrance of the medical school auditorium. Framed certificates also will be awarded individual recipients.

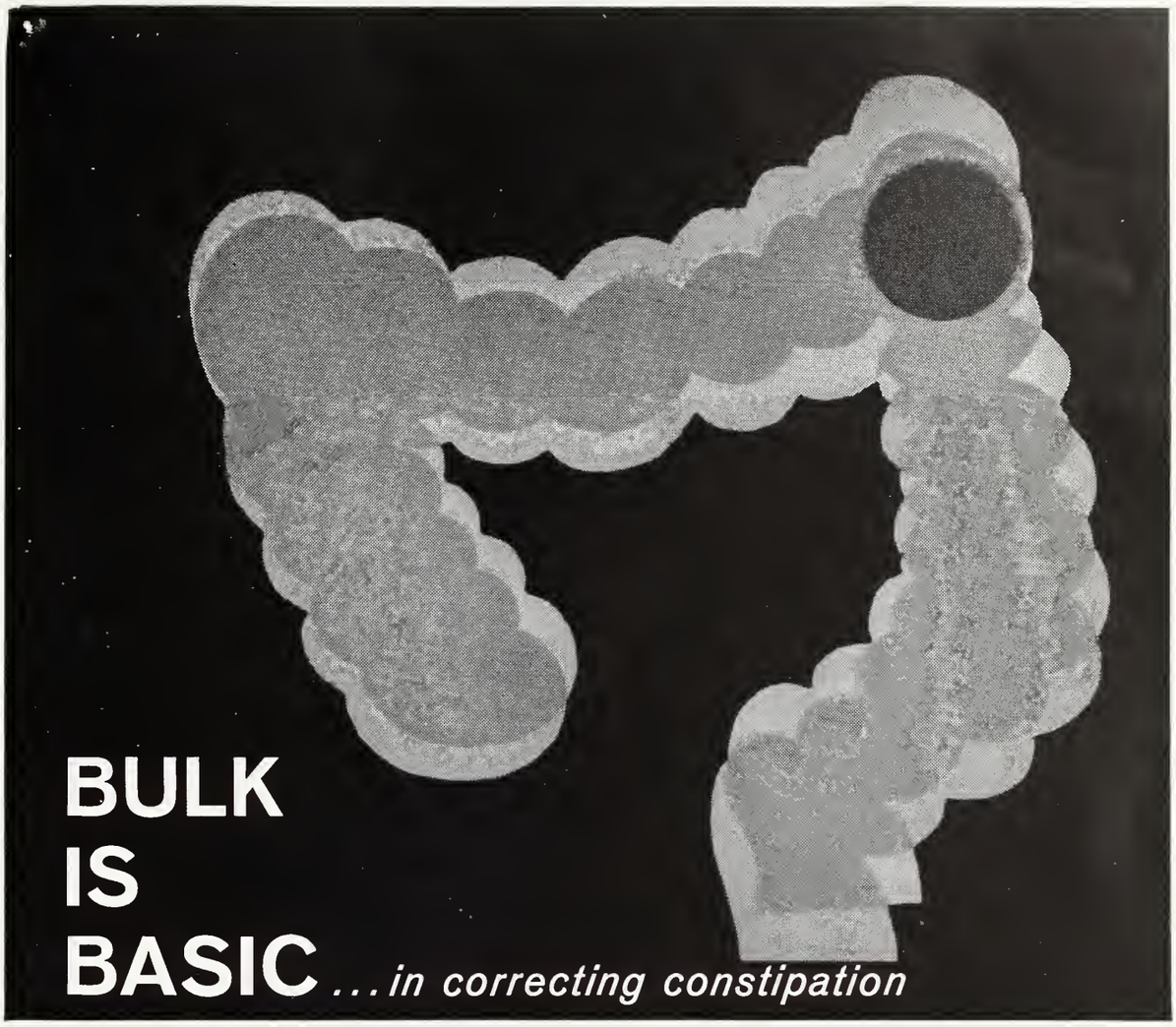
The first presentation was made by Tom Nicklas, Student Council president, in ceremonies before the student body and faculty members May 17.

A medical educator for 30 years, Doctor Daron joined the OU faculty in 1947. He was graduated from McPherson College in his native McPherson, Kansas, and received the Ph. D. in anatomy at the University of Chicago in 1932.

He taught in the anatomy departments at New York University and Georgetown University schools of medicine before coming here.

Doctor Simon came to the Medical Center in 1960 after serving two years as chief of pediatrics at Tinker Air Force Base. He also is director of the outpatient clinics at Children's Memorial Hospital.

The pediatrician did his undergraduate work at the University of California and earned his M.D. at the University of California School of Medicine, San Francisco, in 1955. He finished residency training at Grace New Haven Hospital, New Haven, Connecticut, and Boston Children's Hospital, Boston, Massachusetts. □



METAMUCIL®

BRAND OF PSYLLIUM HYDROPHILIC MUCILLOID

STRENGTHENS THE COLONIC REFLEX

"The natural stimulus to peristalsis[1]... is the distension of the intestinal wall...."

The effectiveness of Metamucil in correcting constipation is a direct result of its physiologic action.

The stimulus which initiates the defecatory reflex is the fecal mass in the lower sigmoid colon and rectum. Metamucil provides that mass as a bland, nonirritating, easily compressed bulk, similar in consistency to the normal protective mucus of the colon. Taken regularly, Metamucil tends to correct the insensitive reflex of a bowel abused by laxatives and to restore the natural responsiveness to the urge to stool.

Metamucil is available as Metamucil powder in 4, 8 and 16-oz. containers and as lemon-flavored Instant Mix Metamucil in cartons of 16 and 30 single-dose packets.

1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

G. D. SEARLE & CO.
CHICAGO 80, ILLINOIS

Research in the Service of Medicine

THE GOALS OF OSMA

"We're going to strive for a better organization from within, as well as to expand and improve the effectiveness of our external operations," OSMA President J. Hoyle Carlock, M.D., said in announcing his program for 1962-63.

He praised the efforts of previous administrations in coping with the dynamic changes confronting organized medicine, and explained his program as a "consolidation of ideas designed to prepare the association for a challenging future."

"The past history of the OSMA has been most progressive, but we are now entering upon a new era," he said, "an era in which the basic tenets of our health care system will be repeatedly and brutally attacked. We must be sure that our house is in order, that we are united, and that we are prepared to deal swiftly and effectively with the external forces which threaten us."

Internal Operations

To solidify the profession, Doctor Carlock plans to devote much attention to the internal affairs of the OSMA. Better rapport between the state association office and the county medical societies and individual members will be a principal objective for the present organizational year.

First, office management procedures of the central office must be streamlined to insure the greatest possible service to the membership, and an Associate Executive Secretary must be hired and trained to achieve a more even distribution of the growing workload.

In addition, a number of intraprofessional projects are planned, such as: An annual fall conference for county society officers; a county society visitation program by OSMA officers and staff; expanded postgraduate education activities; a program bureau for county society meetings; a literature supply service for physicians' waiting rooms; a re-evaluation of the ethical standards of professional practice; and improved printed communications to the membership.

"Our intraprofessional activities should not only make us better physicians, but should also strengthen our organization for even more effective external operations," he said.

External Operations

Doctor Carlock observed that the OSMA, by comparison with other medical societies, is small in staff and financing. "Thus," he said, "we must establish priority projects for special emphasis; projects which are in keeping with our ability to accomplish in an effective manner.

"External operations must be of a quality which will not only accomplish medicine's objectives in the defined areas, but must also engender intraprofessional pride in the organization and earn enthusiastic physician-support of its activities."

Doctor Carlock explained that the OSMA will continue to be interested in all matters affecting the profession or public health, but will tend to "focus its wherewithal" on areas of major concern.

He named the following projects for special emphasis during his term of office: A reappraisal of the effectiveness of the implementation of the Kerr-Mills Law in Oklahoma; the study and activation of an improvement in voluntary health insurance; full mobilization for the impending federal legislative campaign; reappraisal of osteopathic relations; the planning and conduct of a polio immunization campaign; and, the expansion and improvement of public relations activities.

"Physicians are becoming more and more sensitive to the need for improved public relations," he said, "and I consider this to be our most important objective."

Suggested public relations activities are: The establishment and utilization of an OSMA Speakers Bureau; the production of a public information television series; the inauguration of a health column for the state's weekly newspapers; increased frequency in the issuance of news releases on association activities and policies; and the preparation and distribution of advertising materials to county medical societies.

Able Assistance

"The OSMA program for 1962-63 is an ambitious one," Doctor Carlock said, "but we are fortunate in having excellent manpower in our Council and Committee structures. We may not accomplish all we set out to do, but I am confident that a supreme effort will be made by the many physicians who have agreed to help their association."

Shouldering important administrative responsibilities for the OSMA this year are Council Chairmen Rex E. Kenyon, M.D., (Public Policy), Paul D. Erwin, M.D., (Public Health), R. Q. Goodwin, M.D., (Insurance), Wilkie D. Hoover, M.D., (Socio-Economic Activities), and R. R. Hannas, M.D., (Professional Education).

"These men are cabinet-level assistants to the president," Carlock stated. "They have my full confidence and support, and I know they are assured of the complete cooperation of their committees toward the attainment of the goals of OSMA." □

OFFICERS and TRUSTEES
of the
OKLAHOMA STATE MEDICAL ASSOCIATION

President—J. Hoyle Carlock, M.D., Ardmore

President-Elect—Peter E. Russo, M.D., Oklahoma City

Vice-President—Frances P. Newlin, M.D., Shawnee

Secretary-Treasurer—Mark R. Johnson, M.D., Oklahoma City

Past-President—Walter E. Brown, M.D., Tulsa

Past-President—Clinton Gallaher, M.D., Shawnee

Delegate to the A.M.A.—Wilkie D. Hoover, M.D., Tulsa

Alternate Delegate to the A.M.A.—Joe L. Duer, M.D., Woodward

Delegate to the A.M.A.—Malcom E. Phelps, M.D., El Reno

Alternate Delegate to the A.M.A.—Thomas C. Points, M.D., Oklahoma City

Speaker of the House of Delegates—Marshall O. Hart, M.D., Tulsa

Vice-Speaker—C. M. Hodgson, M.D., Kingfisher

Editor-in-Chief Journal—C. B. Dawson, M.D., Oklahoma City.

TRUSTEES

DISTRICT #1

Wylie G. Chesnut, M.D.
Miami

L. B. Word, M.D.
Bartlesville

DISTRICT #2

A. M. Evans, M.D.
Perry

G. B. Gathers, Jr., M.D.
Stillwater

DISTRICT #3

James Petty, M.D.
Guthrie

Avery B. Wight, M.D.
Enid

DISTRICT #4

Walter H. Dersch, Jr., M.D.
Shattuck

John X. Blender, M.D.
Cherokee

DISTRICT #5

Ross Deputy, M.D.
Clinton

C. Riley Strong, M.D.
El Reno

DISTRICT #6

Vernon D. Cushing, M.D.
Oklahoma City

E. E. Shircliff, M.D.
Oklahoma City

DISTRICT #7

Jerold D. Kethley, M.D.
Shawnee

E. K. Norfleet, M.D.
Bristow

DISTRICT #8

Wendell L. Smith, M.D.
Tulsa

Earl M. Lusk, M.D.
Tulsa

DISTRICT #9

Francis R. First, M.D.
Checotah

Burdge F. Green, M.D.
Stilwell

DISTRICT #10

Thurman Shuller, M.D.
McAlester

C. E. Lively, M.D.
McAlester

DISTRICT #11

Thomas E. Rhea, M.D.
Idabel

W. A. Hyde, M.D.
Durant

DISTRICT #12

Ennis M. Gullatt, M.D.
Ada

M. E. Robberson, M.D.
Wynnewood

DISTRICT #13

J. T. Hicks, M.D.
Lawton

W. R. Cheatwood, M.D.
Duncan

DISTRICT #14

J. B. Hollis, M.D.
Mangum

R. R. Hannas, M.D.
Sentinel

Standing Committees

EXECUTIVE COMMITTEE

J. Hoyle Carlock, M.D., Ardmore, Chairman
Clinton Gallaher, M.D., Shawnee
Wilkie D. Hoover, M.D., Tulsa
Malcom E. Phelps, M.D., El Reno
Peter E. Russo, M.D., Oklahoma City
Frances P. Newlin, M.D., Shawnee
Mark R. Johnson, M.D., Oklahoma City

GRIEVANCE

John F. Burton, M.D., Oklahoma City, Chairman
E. C. Mohler, M.D., Ponca City
A. T. Baker, M.D., Durant
Walter E. Brown, M.D., Tulsa
Clinton Gallaher, M.D., Shawnee

Councils and Special Committees

COUNCIL ON PUBLIC POLICY

Rex E. Kenyon, M.D., Oklahoma City, Chairman
R. Q. Goodwin, M.D., Oklahoma City
John E. McDonald, M.D., Tulsa
M. H. Newman, M.D. Shattuck
Elmer Ridgeway, M.D., Oklahoma City
Thomas C. Points, M.D., Oklahoma City
M. E. Robberson, M.D., Wynnewood
B. J. Rutledge, M.D., Oklahoma City
Worth M. Gross, M.D., Tulsa

COMMITTEES

Federal Legislative

Worth M. Gross, M.D., Tulsa, Chairman
Thomas C. Points, M.D., Oklahoma City
Tom S. Gafford, M.D., Muskogee
Paul Lingenfelter, M.D., Clinton
Frank Clark, M.D., Ardmore
E. H. Shuller, M.D., McAlester
William A. Matthey, M.D., Lawton
Paul Gallaher, M.D., Shawnee
Mark D. Holcomb, M.D., Enid
David Carson, M.D., Fairland
Ollie McBride, M.D., Ada
Veron D. Cushing, M.D., Oklahoma City
M. Joe Crosthwait, M.D., Oklahoma City

State Legislative

Elmer Ridgeway, M.D., Oklahoma City, Chairman
Orange M. Welborn, M.D., Ada
Louis H. Ritzhaupt, M.D., Guthrie
Ceylon S. Lewis, M.D., Tulsa
M. H. Newman, M.D., Shattuck
E. K. Norfleet, M.D., Bristow
Peter E. Russo, M.D., Oklahoma City

COUNCIL ON INSURANCE

R. Q. Goodwin, M.D., Oklahoma City, Chairman
William R. Cheatwood, M.D., Duncan
William S. Dandridge, M.D., Muskogee
E. C. Mohler, M.D., Ponca City
Dave B. Lhevine, M.D., Tulsa

COMMITTEES

Professional Liability

Dave B. Lhevine, M.D., Tulsa, Chairman
C. E. Woodard, M.D., Drumright
Cooper Ray, M.D., Altus
Wylie G. Chesnut, M.D., Miami
Richard McDowell, M.D., Tulsa

Group Insurance

E. C. Mohler, M.D., Ponca City, Chairman
R. G. Allen, M.D., Bartlesville
James R. Rhymer, M.D., Clinton
C. Alton Brown, M.D., Oklahoma City

COUNCIL ON PROFESSIONAL EDUCATION

R. R. Hannas, M.D., Sentinel, Chairman
Wendell L. Smith, M.D., Tulsa
Gregory Stanbro, M.D., Oklahoma City
Clinton Gallaher, M.D., Shawnee
Irwin H. Brown, M.D., Oklahoma City

COMMITTEES

American Medical Association Education and Research Foundation

John R. Taylor, M.D., Kingfisher, Chairman
Wilbert F. Lewis, M.D., Lawton
Samuel T. Moore, M.D., Oklahoma City

Financial Aid to Education

Clinton Gallaher, M.D., Shawnee, Chairman
Peter E. Russo, M.D., Oklahoma City
Walter E. Brown, M.D., Tulsa
A. T. Baker, M.D., Durant
J. Hoyle Carlock, M.D., Ardmore

Medical School Liaison

Gregory Stanbro, M.D., Oklahoma City, Chairman
R. R. Hannas, M.D., Sentinel
S. N. Stone, Jr., M.D., Oklahoma City
Cleve Beller, M.D., Okmulgee
W. R. Cheatwood, M.D., Duncan
John R. Taylor, M.D., Kingfisher
Wendell L. Smith, M.D., Tulsa
Hillard E. Denyer, M.D., Bartlesville
Marvin B. Glismann, M.D., Oklahoma City

Postgraduate Education

R. R. Hannas, M.D., Sentinel, Chairman
V. C. Merrifield, M.D., Ponca City
Gilbert Tracy, M.D., Muskogee
Clifford Bassett, M.D., Cushing
C. K. Holland, M.D., McAlester
E. M. Amen, M.D., Bartlesville
Robert T. Sturm, M.D., Oklahoma City
Roger Reid, M.D., Ardmore
B. C. Chatham, M.D., Chickasha
J. T. Colwick, Jr., M.D., Durant
Irwin H. Brown, M.D., Oklahoma City
John Adair, M.D., Ardmore

COUNCIL ON SOCIO-ECONOMIC ACTIVITIES

Wilkie D. Hoover, M.D., Tulsa, Chairman
Kenneth L. Wright, Jr., M.D., Ardmore
A. T. Baker, M.D., Durant
Kieffer Davis, M.D., Bartlesville
E. M. Gullatt, M.D., Ada

COMMITTEES

Prepaid Medical Care

Kenneth L. Wright, Jr., M.D., Ardmore, Chairman
Maurice Gephardt, M.D., Muskogee
James B. Eskridge, III, M.D., Oklahoma City
Ancel Earp, Jr., M.D., Oklahoma City
R. R. Hannas, M.D., Sentinel
Howard A. Bennett, M.D., Tulsa

Public Welfare

E. M. Gullatt, M.D., Ada, Chairman
Stanley R. McCampbell, M.D., Oklahoma City
George Garrison, M.D., Oklahoma City
E. H. Shuller, M.D., McAlester
B. C. Chatham, M.D., Chickasha

COUNCIL ON PUBLIC HEALTH

Paul D. Erwin, M.D., Oklahoma City, Chairman
J. Walker Morledge, M.D., Oklahoma City
William K. Ishmael, M.D., Oklahoma City
George H. Guthrey, M.D., Oklahoma City
Hayden H. Donahue, M.D., Norman
Don H. O'Donoghue, M.D., Oklahoma City
Gifford H. Henry, M.D., Tulsa
Lynn H. Harrison, M.D., Oklahoma City
Charles E. Green, M.D., Lawton

COMMITTEES

Automobile Safety

Lynn H. Harrison, M.D., Oklahoma City, Chairman
Charles W. Freeman, M.D., Oklahoma City
J. Neill Lysaught, M.D., Oklahoma City

Disaster Medical Care

Gifford H. Henry, M.D., Tulsa, Chairman
William H. Reiff, M.D., Oklahoma City
Kirk T. Mosley, M.D., Commissioner of Health, Oklahoma City
Vance Bradford, M.D., Oklahoma City
Cody Ray, M.D., Pawhuska
Orange M. Welborn, M.D., Ada

High School Athletic Injuries

Don H. O'Donoghue, M.D., Oklahoma City, Chairman
William Geiger, Jr., M.D., Fairfax
R. G. Obermiller, M.D., Woodward
John G. Rollins, M.D., Prague

Mental Health

George H. Guthrey, M.D., Oklahoma City, Chairman
Joe E. Tyler, M.D., Tulsa
Hayden H. Donahue, M.D., Norman
T. Glyne Williams, M.D., Oklahoma City
Robert L. Loftin, M.D., Broken Bow
John X. Blender, M.D., Cherokee

Perinatal Mortality

John W. Records, M.D., Oklahoma City, Chairman
John Shackelford, M.D., State Health Department, Oklahoma City
Jacob Kay, M.D., Oklahoma City
George Garrison, M.D., Oklahoma City
Matthew Moore, M.D., Tulsa
Elmer Ridgeway, M.D., Oklahoma City
Hall Ketchum, M.D., Tulsa
William McShane, M.D., Tulsa
Thomas C. Points, M.D., Oklahoma City

Rehabilitation

William K. Ishmael, M.D., Oklahoma City, Chairman
Earl D. McBride, M.D., Oklahoma City
Ella Mary George, M.D., Oklahoma City
Lee K. Emenhiser, M.D., Oklahoma City
William L. Waldrop, M.D., Oklahoma City
Jack L. Richardson, M.D., Tulsa
Russell Harris, M.D., Oklahoma City
Moorman P. Prosser, M.D., Oklahoma City
Francis E. Dill, M.D., Oklahoma City
Louis H. Ritzhaupt, M.D., Guthrie
Herbert Kent, M.D., Oklahoma City

School Health

Charles E. Green, M.D., Lawton, Chairman
Jacob Kay, M.D., Oklahoma City
Martin H. Andrews, M.D., Oklahoma City
Paul C. Benton, M.D., Tulsa
David Carson, M.D., Fairland
George K. Stephens, M.D., Ada
Emil F. Stratton, M.D., Muskogee
John W. Shackelford, M.D., Oklahoma City
Robert K. Endres, M.D., Tulsa

8th Southeastern Clinical Symposium—McAlester

The McAlester Clinic Foundation has announced its 8th Southeastern Clinical Symposium to be held July 28th at McAlester's Aldridge Hotel.

Registration for the all-day meeting will begin at 9:00 a.m. Saturday. E. H. Shuller, M.D., Chief of Staff of the McAlester Clinic Association, will welcome participants at 9:45 a.m., and the scientific program will continue throughout the day. AAGP will grant six hours credit, Category II.

A special feature of the meeting will be a luncheon for physicians and their wives. Speaker for the event will be F. H. Krock, M.D., Ft. Smith, who will address the group on the "Sword of Damocles."

Other speakers are: Harris D. Riley, Jr., M.D., Oklahoma City; John B. Nettles, M.D., Little Rock; Samuel B. Johnson, M.D., Jackson, Miss.; J. P. Stanford, M.D., Dallas; A. Keller Doss, M.D., Ft. Worth; H. K. Strauss, M.D., Jackson, Mississippi; and Tom S. Gafford, M.D., Muskogee, who will moderate a panel.

The day will conclude with dinner and entertainment at the McAlester Country Club. □

15,000 Attend AMA Meeting

Nearly 15,000 physicians and some 30,000 others attended the American Medical Association's 111th Annual Meeting held June 24-28 in Chicago.

The AMA's House of Delegates meeting at the Palmer House, took important action on health care for the aged, medical discipline, composition of the AMA Board of Trustes, a study of the American Board of Abdominal Surgery, relations with the American College of Surgeons and voluntary health insurance.

Installed as AMA president was George M. Fister, M.D., Urologist from Odgen, Utah. To succeed Doctor Fister next June, the House of Delegates tapped Edward R. Annis, M.D., Miami, Florida, as president-elect.

House of Delegates

The AMA House of Delegates considered about 100 resolutions and reports. Among the most significant were the following:

•**Health Care For The Aged.** The Kerr-Mills program was endorsed and the King-Anderson Bill was opposed by seventeen separate resolutions, all of which were approved by the House in a statement which cited the lack of need for King-Anderson legislation, the inadequacy of the bill, the socialistic implications of Social Security financing, and the deterioration of quality care which would result from such a program. Delegates argued a "fair and reasonable" chance for the Kerr-Mills program to prove its worth.

In response to a related resolution calling for a boycott of King-Anderson enactment, the House pointed up a physician's ethical responsibility to not dispose of his services under terms or conditions which tend to interfere with his medical judgement.

•**Medical Discipline.** The AMA bylaws were amended to provide that the national organization may take disciplinary action against a member when the consent of the member's state association is obtained, or upon the request of the state group.

•**Board of Trustees.** An Ad Hoc committee report was approved which will increase the Board size from eleven to fifteen members, and will shorten the term of office.

•**Board of Abdominal Surgery.** Recognition as a specialty board was denied in accordance with the study report by AMA's Council on Medical Education and Hospitals. The House of Delegates declared its disapproval of establishing specialties which are based largely on an "arbitrarily defined anatomical region of the body."

•**American College of Surgeons.** Delegates took exception to recent pronouncements of the American College of Surgeons, stating that the adoption and interpretation of the Principles of Medical Ethics are the prerogative and duty of the AMA. Moreover, a 1961 policy of the AMA was restated, which endorsed the universal application of the AMA's ethics, defended the concept of fee-for-service, objected to compensation for referral service alone, called for separate billing for separate services performed but said certain circumstances would make it permissable for a surgeon to employ an assistant.

•**Voluntary Health Insurance.** With regard to utilizing tax funds to provide voluntary health insurance for the aged, the House approved a policy statement which endorsed prepayment as an individual responsibility where possible, but recognized the advisability of outside assistance, including appropriate Federal government participation, for those unable to pay the necessary premiums. The House further indicated that such cooperative efforts should be free of government controls and should be comprehensive rather than token in character.

•**Other Action.** The House also iniated a study on the relationship of tobacco to disease; asked the Board of Trustees to consider the reconstitution of the Council on Medical Education and Hospitals (to affect more private practice representation); requested a study of specialty residencies; reaffirmed opposition to compulsory coverage of physicians under Social Security. □

Social Security Bill Hits Senate

With the controversial King-Anderson Bill bottled up in the House Ways and Means Committee, Senator Clinton Anderson and the administration pulled a last-ditch effort to enact the legislation when they affixed an expanded version of it as an amendment to a House-passed bill in the Senate (HR 10606).

The latest proposal would not be effective until January, 1964, which seems to preclude any necessity for bypassing normal legislative process, as attempted by Anderson. □

Proceedings of the 56th Annual Session of the House of Delegates

of the

Oklahoma State Medical Association

OPENING SESSION

The 56th Annual Session of the House of Delegates of the Oklahoma State Medical Association was called to order at 10:05 a.m., by Marshall O. Hart, M.D., Speaker of the House of Delegates, on Saturday, May 5, 1962, in the Persian Room of the Skirvin Tower, Oklahoma City.

The Credentials Committee Chairman C. Riley Strong, M.D., declared a quorum present.

Invocation was given by Doctor Roger Reid of Ardmore.

The Speaker announced the appointment of the following working committees of the House of Delegates.

Credentials Committee

C. Riley Strong, M.D., Chairman
W. R. Cheatwood, M.D.
William A. Matthey, M.D.
Dwight D. Pierson, M.D.
Charles E. Wilbanks, M.D.

Constitution and Bylaws Committee

J. L. Duer, M.D., Chairman
R. Q. Goodwin, M.D.
Harold H. Jones, M.D.
E. K. Norfleet, M.D.
Louis H. Ritzhaupt, M.D.

Miscellaneous Business Committee

Malcom E. Phelps, M.D., Chairman
Ben F. Gorrell, M.D.
Roger Reid, M.D.
Lillian Robinson, M.D.
Carlton E. Smith, M.D.

Legislation and Public Policy Committee

Wilkie D. Hoover, M.D., Chairman
Tom S. Gafford, M.D.
M. B. Glismann, M.D.
Worth M. Gross, M.D.
R. O. Johnson, M.D.

Insurance and Medical Service Committee

Thomas C. Points, M.D., Chairman
William A. Geiger, M.D.
Charles A. Smith, M.D.
John R. Stacy, M.D.
Harlan Thomas, M.D.

Sergeants at Arms

E. K. Norfleet, M.D., Chairman
James M. Bayless, M.D.
J. T. Colwick, Jr., M.D.
John Moore, M.D.

Tellers

Mark Holcomb, M.D., Chairman
James M. Bayless, M.D.
Clair Liebrand, M.D.
John B. Miles, M.D.
Frances P. Newlin, M.D.
Donald Olson, M.D.

Parliamentarian

C. M. Hodgson, M.D.

As the next order of business, the following individuals were introduced and brought greetings to the House of Delegates:

Mrs. Pat Fite, Sr., President of the Woman's Auxiliary to the Oklahoma State Medical Association.

Mrs. Milton Berg, Incoming President of the Woman's Auxiliary.

Mrs. Aaron Margulis, Director of the AMA Woman's Auxiliary.

Mark R. Everett, Ph.D., Dean of the University of Oklahoma School of Medicine.

Kirk T. Mosley, M.D., Commissioner of Health.

The Speaker then announced that the 57th Annual Meeting of the Oklahoma State Medical Association would be held in Tulsa, May 4-6, 1963, and asked the pleasure of the House of Delegates with regard to the reading of the minutes of the last Annual Meeting.

E. K. Norfleet, M.D., moved that the House of Delegates dispense with the reading of the last Annual Meeting Minutes, and the minutes be adopted as published in the OSMA Journal. Walter E. Brown, M.D., seconded the motion and it carried.

NOMINATION OF OFFICERS

The next order of business on the agenda was the nomination of officers. The Speaker declared the House of Delegates open for nominations for the office of President-Elect (one year term of office).

Joe L. Duer, M.D., Woodward, was nominated by Malcom Phelps, M.D., El Reno.

Peter E. Russo, M.D., Oklahoma City, was nominated by J. R. Stacy, M.D., Oklahoma City.

Motion was made to cease nominations; motion was duly seconded and carried.

Nominations were declared open for the office of Vice-President (one year term of office).

Frances P. Newlin, M.D., Shawnee, was nominated by E. K. Norfleet, M.D., Bristow.

Mark R. Johnson, M.D., moved to close nominations; the motion was seconded and carried.

Nominations were declared open for the office of Delegate to the AMA (two year term of office).

Wilkie D. Hoover, M.D., Tulsa, was nominated to succeed himself by Harlan Thomas, M.D., Tulsa.

Ross Deputy, M.D., moved to cease nominations. The motion was seconded and carried.

Nominations were declared open for the office of Alternate Delegate to the AMA (two year term of office).

Francis A. Davis, M.D., Shawnee, was nominated by E. K. Norfleet, M.D., Bristow.

Charles E. Wilbanks, M.D., Tulsa, moved that nominations cease. Motion was seconded and carried.

Nominations were declared open for the office of Secretary-Treasurer (two year term of office).

Mark R. Johnson, M.D., Oklahoma City, was nominated to succeed himself by Robert J. Morgan, M.D., Oklahoma City.

Joe L. Duer, M.D., moved to cease nominations. Motion was seconded and carried.

With C. M. Hodgson, M.D., presiding, nominations were declared open for Speaker of the House of Delegates (two year term of office).

Marshall O. Hart, M.D., Tulsa, was nominated to succeed himself by Francis A. Davis, M.D., Shawnee.

Roger Reid, M.D., moved that

(Continued on page 295)

Letter to the Editor

To the Editor
Dear Sir:

I wish to take issue with you on your editorial which appeared in the June issue of the Journal of the Oklahoma State Medical Association, "The People." You used parts of the Constitution, the Preamble of the Constitution and several Amendments of the Constitution, very much in the same way as the Bible is used to support an argument. Then you state that the "government is the people." If you will turn that concept around to the people are the government and place people before government; that the government derives its authority from the consent of the people and is a servant of the people, then your interpretation of our Constitution would be correct. John Locke, the English philosopher, stated these principles simply and clearly many hundreds of years ago. "Before societies existed, man was in what is called a 'natural state'; he enjoyed complete social and political freedom. The only law he had to obey was the natural law, written in his heart by the Creator to guide him. The fact that men later organized themselves into societies could in no way affect his natural law or the primordial rights men had always enjoyed. If men ultimately entered into social contracts, they did so of their own free will. It was therefore up to them to keep so tight a rein on government that it could never encroach upon their natural rights and their duty to their Creator. When government encroaches it is tyranny; to resist tyranny is not merely a right, but an obligation." It was on this principle that the Colonies fought the Revolutionary War and guided those great men who framed our Constitution. Let us keep this order in mind, first the Creator endowed man with certain unalienable rights. First comes God, then man and next in order is the government given its authority by man as a servant of mankind and not the other way around and is so true of many of our present day governments.

Our society today in America is made up of many segments who constitute "The People." There is one segment of our society made up of one-tenth of our population which is expending tremendous efforts and large sums of money in order to get 100 per cent control of our government. The labor unions with a membership of about 18 million people, with a monthly income of $70,000,000.00, with $50,000,000.00 in their Welfare Funds, $1,500,000,000.00 in assets, and several hundred millions of dollars in special pools of cash and vacation funds, have become the most important factor in our political life in the last thirty years. How about the rest of "The People," the non-union worker, the white collar segment, the profession and farmers, etc. who constitute the majority of our population; where will they match the labor union's resources in the field of political activity. Let's face it, what segment of our population is continuously proposing that the government take over the medical care and welfare of this country? Not "The People" but only a small minority group with tremendous resources and selfish motives.

You think that a service contract would take care of the unconscionable physician, though there may be only a few who give medicine a horrible stench. For many years now the AMA has been trying to counteract the efforts of the labor unions in regard to federal legislation in the field of medical care. Would you like to compare these two segments of our population on their record as to motives, interests, honesty or integrity? Which segment is constantly asking for higher wages and more fringe benefits when a contract expires? Which of these two would you say was responsible for the higher cost of living and medical care? To which of these two would you trust as to what are the medical needs of "The People" and how to best take care of them?

You mention this period of destiny —the atom space age that may mean the ending of a glorious profession— to face the future with the head turned to look back. Let us review some of the results of these last twenty years and let us see in what direction are we headed. We now spend $50,000,000.00 a year on pep pills to keep us alert by day—and an equal amount on sleeping pills to be numb at night. We boast that our incomes have doubled, so has our crime rate. Giving to charities has tripled. So has the breeding of illegitimate children.

And what about the example our government has given, it penalizes sacrifice, discourages thrift, rewards insolence and no longer will trust any individual with any real responsibility. The industrious and successful person is taxed for 90 per cent of his earnings and rewards the loafer with $40.00 a week six months of the year for not working. On what moral grounds does the government take up to one-half of a man's property when he dies? How can the peo-

ADMISSION BY
PHYSICIAN ONLY

A Distinctive Atmosphere
in A Setting of Elegance

Irene's
NURSING
HOME

THE HALLMARK OF
EXCELLENCE IN CHRONIC
and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City
CE 2-8091 CE 2-7853

ple trust a government which continues to spend more than its yearly income? How can a government greatly in debt still insist on loaning and giving money to welfare projects.

Perhaps if our government would make an effort to live within its income, return some of these rights back to its citizens, relieve our heavy burden and cut down on our taxes, protect our industries as well as our labor unions, return to us our former responsibilities as loyal and honest Americans; then shall we have government "of the people, by the people and for the people."

It is more important that we fight for a principle that we believe in not only as physicians, but as good American citizens. We are protecting in this fight the liberties and freedom of our individual citizens who make up our people which have served us so well in the past. Let the voice of "The People" be heard, and not herded by a small and powerful minority group which has teamed up with the federal government to deprive us of our rights as free citizens. I wish to quote from a speech made by Senator Robert Kerr to the House of Delegates of the AMA last year. He said, "I would not discourage you because the task is not hopeless—but it's not self-executed. You have probably the greatest opportunity of any generation of your profession that has ever lived, and all future generations of your profession are going to know whether or not you did your part in keeping the environment for them that has been such a blessing to you. If you do what you are capable of doing and the rank and file of those identified with you across the nation join you, you can tell your children that you made the fight that kept for you the environment which has been your blessing—and pass it on, unimpaired and unsullied, to those that you love even more than you do yourself."

It is in this period that we face destiny and the Atom Space Age.

—*P. E. RUSSO, M.D.*

Proceedings . . .

(Continued from page 293)

nominations cease. The motion was seconded and carried.

The Speaker resumed the chair and announced nominations for Vice-Speaker of the House of Delegates were open (two year term of office).

C. M. Hodgson, M.D., Kingfisher, was nominated to succeed himself by Avery B. Wight, M.D., Enid.

Motion was made to cease nominations; the motion was seconded and carried.

Nominations were declared open for Trustees from Districts No. 1, 4, 7, 10, and 13.

District 1:

Wylie G. Chesnut, M.D., Miami, was nominated by W. A. Howard, M.D., Miami.

L. B. Word, M.D., Bartlesville, was nominated by Elvin M. Amen, M.D., Bartlesville.

District 4:

Walter H. Dersch, Jr., M.D., Shattuck and *John X. Blender, M.D.,* Cherokee, were both nominated by Joe L. Duer, M.D., Woodward.

District 7:

Jerold D. Kethley, M.D., Shawnee, was nominated by Frances P. Newlin, M.D., Shawnee.

E. K. Norfleet, M.D., Bristow, was nominated by Clinton Gallaher, M.D., Shawnee.

District 10:

Thurman Shuller, M.D., McAlester, and *C. E. Lively, M.D.,* McAlester, were nominated by Floyd T. Bartheld, M.D., McAlester.

District 13:

J. T. Hicks, M.D., Lawton, was nominated by Leslie T. Hamm, M.D., Lawton.

W. R. Cheatwood, M.D., Duncan, was nominated by J. B. Miles, M.D., Anadarko.

Motion was made to cease nominations; the motion was seconded and carried.

As the next order of business, the Delegates and Alternates of the AMA reported on recent activities of the AMA, as well as on future projects.

TRUSTEES REPORT

Doctor Hart announced the next order of business would be the report from the Board of Trustees.

Doctor Clinton Gallaher told the House of Delegates he would read his report, and an addendum thereto, and asked that they approve or disapprove his report by section. (A copy of this report as approved is attached and made a part of these minutes. See page 301).

He read Section I of the report and made the following motion:

I move the approval of Section I of the Board of Trustees report. Walter E. Brown, M.D., seconded the motion and it carried.

Doctor Gallaher read Section II of the report and *moved that this section be approved. The motion was seconded and carried.*

Doctor Gallaher moved that that portion of Section II requiring an amendment to the Constitution and Bylaws be referred to the Constitution and Bylaws Committee. Wilkie D. Hoover, M.D., seconded the motion and it carried.

Following the above action, *Doctor Gallaher moved that the Board of Trustees Report be adopted as a*

(Continued on page 297)

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street

Oklahoma City, Oklahoma

Miscellaneous Advertisements

WELL EQUIPPED CLINIC, rent free, in Ringling, Oklahoma. X-ray machine for sale. Will either sell or loan other equipment, or will vacate the offices. Fine school and churches. Present physician leaving to take further training. Contact W. J. Moore, Moore Drug, Ringling, Oklahoma.

PRACTICE AVAILABLE on or before August 1, 1962. Will leave office fully equipped including 200 MA General Electric x-ray if desired. Reason for leaving—moving to Bartlesville. Contact Frank M. James, M.D., 119 South Price, Hominy, Oklahoma.

FOR SALE: General practice office, fully equipped. One partner taking further training, the other retiring. Contact Agnew A. Walker, M.D., Wewoka, Okla.

PHYSICIAN WANTED: Unopposed, prosperous territory, modern city of about 3,000. Quitting because of age and health. Well-equipped office. Good hospital nearby. May be paid off in small monthly payments. Contact J. S. Jacoby, M.D., Bank Building, Commerce, Oklahoma.

FOR RENT: one office and four treatment rooms. Share reception room and laboratory with urologist and pediatrician (one receptionist). Near Wesley, Mercy and St. Anthony Hospitals in Oklahoma City. Twelve doctors in building which was built in 1954. Contact C. L. Casebeer, M.D., 5700 N.W. Grand Blvd., Oklahoma City. Phone WI 6-6729.

LOST—American Optical Company Spencer binocular-type microscope, serial #418054. Contact Andrew Talley, Administrator, Grady Memorial Hospital, Chickasha, Oklahoma.

FOR SALE: General Practice in town of 2800. Associated with another young physician. Gross $40,000 per year. Eighteen-bed modern, community hospital. Terms can be arranged. Reason for leaving August 5th, accepting position with Atomic Energy Commission. Contact W. G. Mays, M.D., or W. A. Geiger, Jr., M.D., Fairfax, Oklahoma.

FOR SALE: Maico audiometer, four years old. Good condition, both air and bone conductor. Call or write: C. A. Pavy, M.D., 2132 East 25th Street, Tulsa, Oklahoma. RI 7-1165.

FOR SALE: Moline's Clinic in Lawton. Fully equipped, 1,500 square feet; 200 M.A. G.E. X-ray; laboratory equipment. Leaving as soon as possible. Terms. Lease or sub-lease. Contact Lester Moline, M.D., 2503 Sheridan Road, Lawton, Oklahoma. Call ELgin 3-4760.

PHYSICIAN wanted for established practice in Ralston, Pawnee County. Large agricultural area surrounds town of 1,000 population. Hospitals available in two nearby locations. Excellent school and churches, thirty-five miles from OSU. Contact Clara M. Powell, P.O. Box 112, Ralston, Oklahoma. Telephone REdwood 8-4289.

PHYSICIAN, age 30, with experience in general practice and surgery, wishes association or partnership with established general practitioner. Military obligation fulfilled. Contact Key G, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

FOR SALE: 100 MA Kelly-Koett X-Ray in excellent condition, used four years. Make offer. Contact A. M. Brown, Jr., M.D., The Perry Clinic, Perry, Oklahoma.

FOR SALE: Book case, instrument case, baumanometer, microscope, Cameron electric knife, coagulator, small sterilizer, seven stainless steel instruments, tonsillectomy set and many other instruments. Contact C. O. Epley, M.D., 31244 North Youngs, Oklahoma City.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

POSITION for physician to work full time in University Health work at Oklahoma State University in Stillwater. Excellent working conditions, regular hours and many extra benefits. Contact Donald L. Cooper, M.D., Director, Student Health Service, Oklahoma State University, Stillwater, Oklahoma.

FOR LEASE: Air conditioned space in new section of shopping center—N.E. corner Britton Road and May Avenue. 900 to 3600 square feet, arranged to suit tenant. Reasonable rent. Contact O. Alton Watson, M.D., 1200 North Walker. CE 5-5496.

HOUSE STAFF PHYSICIAN Wanted: St. Francis Hospital, Tulsa, desires physician to work half-days 4 days per week, round-the-clock on 5th day. Salary $8-900 per month. Contact W. D. Hoover, M.D., Pan American Building, Tulsa.

(Continued from page 295)

whole. It was seconded and motion carried.

COUNCIL REPORTS

Doctor Hart announced that the next order of business would be the reports of the Association's Five Councils.

COUNCIL ON PUBLIC POLICY: (A copy of this report as finally approved is attached and made a part of these minutes—see page 303).

R. Q. Goodwin, M.D., Chairman of the Council on Public Policy read the report and the following motions were made:

Louis H. Ritzhaupt, M.D., moved to delete the word "politics" in the first line of the second paragraph on page 3, and to substitute the words "government controlled policies" in lieu thereof. J. B. Miles, M.D., seconded the motion and it carried.

Thomas E. Rhea, M.D., moved to delete the word "receiving" in the third line of the third paragraph on page 1, and insert the words, "eligible to receive" in place thereof. The motion was seconded and carried.

Doctor Goodwin moved that Section I be adopted as corrected. The motion was seconded and carried.

After reading Section II of the report, *Doctor Goodwin made the motion that this section of the report be approved. Doctor Rhea seconded the motion and it carried.*

Doctor Goodwin also gave a report of the Grievance Committee, explaining that the committee had adopted a different procedure in handling grievances this year. He said that when a complaint was filed, the physician involved was contacted by the committee, and the physician, in turn, contacted the patient in an attempt to resolve their differences without the aid of the committee. He stated this plan had been very successful during the past year. *He then moved that his report be adopted; the motion was seconded and carried.*

COUNCIL ON INSURANCE: (A copy of this report is attached and made a part of these minutes—see page 305).

Bruce R. Hinson, M.D., Chairman of the Council on Insurance read the report and *moved that it be approved as read. G. B. Gathers, Jr., M.D., seconded the motion and it carried.*

At 12:25 p.m., the Speaker announced the meeting would recess for lunch, and would reconvene in approximately one and one-half hours.

* * *

The House of Delegates reconvened at 2:00 p.m., and a quorum was declared present by the Chairman of the Credentials Committee, C. Riley Strong, M.D.

The House of Delegates continued with the reports of Councils.

COUNCIL ON PUBLIC HEALTH: (A copy of the report as finally approved is attached and made a part of these minutes—see page 306).

Charles E. Green, M.D., Chairman of the Council on Public Health, read the report by sections.

Section I—Rehabilitation Committee: *Doctor Green moved that this section of the report be approved. Motion was seconded and carried.*

Section II—Disaster Medical Care Committee: *Doctor Green moved that this section be approved. The motion was seconded and carried.*

Section III — Perinatal Mortality Committee: *Doctor Green moved this section of the report be approved. Motion was seconded and carried.*

Section IV—Mental Health Committee: *Doctor Green moved, and it was seconded, that this section of the report be approved. The question was put to a vote and was disapproved.*

Section V—Recommendation of the Council on Public Health in Regard to Polio Immunization: After reading this section of the report, Doctor Green told the House of Delegates that Comanche County had implemented the first step of this program at a cost of twenty-five cents a dose. Doctor Green said in his opinion the oral vaccine is more effective than parenteral vaccine and should be taken although the other type has been administered.

Doctor Vincel Sundgren moved to insert the word "epidemic" between the words "polio" and "in" in paragraph No. 1, line one. The motion was seconded and carried.

Doctor Green moved that Section V of the report be approved as amended. The motion was seconded and carried.

COUNCIL ON PROFESSIONAL EDUCATION: (A copy of this report as finally approved is attached and made a part of these minutes—see page 308).

R. R. Hannas, M.D., Chairman of the Council on Professional Education, read the report by sections.

Section I—Committee on Postgraduate Education: *Doctor Wylie Chesnut, Miami, moved to approve this section of the report, and to commend the chairman and the entire committee for the excellent job they have performed. Wilkie D. Hoover, M.D., seconded the motion and it carried.*

Section II—Medical School Liaison Committee: *Doctor Hannas moved the approval of this section. Motion was seconded and carried.*

Section III——A.M.A.E.R.F. Committee: *Doctor G. B. Gathers moved to delete the words "this state" in paragraph No. 1, line three, and substitute the words "the citizens of this state" in lieu thereof. Motion was seconded and carried.*

Doctor Hannas moved the approval of this section as amended. Motion was seconded and carried.

Financial Aid to Education Committee: (A copy of this report is attached and made a part of these minutes—see page 309).

Walter E. Brown, M.D., Chairman of the Financial Aid to Education Committee read the report, and *moved that the report be approved as read. Motion was seconded and carried.*

COUNCIL ON SOCIO-ECONOMIC ACTIVITIES: (A copy of the report as finally approved is attached and made a part of these minutes—see page 310).

Mark R. Johnson, M.D., Chairman of the Council on Socio-Economic Activities read the report. Doctor Johnson told the Delegates that the report of the Prepaid Medical Care Committee was an addendum to the report, due to the fact that the information had just been received from

Blue Shield, and it should be considered as part of the Council's report.

After the report was read, Doctor Malcom Phelps brought to the Delegates attention that paragraphs No. 1 and 2, on page one of the report, were in direct conflict with proposed Amendment No. 12, which is to be considered and acted upon later in the meeting. *He then moved that consideration of the Council on Socio-Economic Activities' report follow action on the report of the Constitution and Bylaws Committee. Earl M. Lusk, M.D., seconded the motion.*

E. M. Gullatt, M.D., then pointed out that if the House passed an amendment at this meeting, it would not become effective for one year, and unless they approved this report, there would be no changes in the fee schedule.

E. E. Shircliff, M.D., told the Delegates that if the report is adopted, and Amendment No. 12 is subsequently approved and made a part of the Constitution and Bylaws of the OSMA, it will automatically eliminate that portion of the report with which it conflicts.

Objection was also raised to that part of the report (paragraph No. 6 of the Addendum) where a personal recommendation is made.

Doctor Johnson said if the House so desired, the Council could separate the report down to the point where Doctor Nelson makes a personal recommendation. He then asked the House to consider the following substitute motion:

I move the adoption of the Council on Socio-Economic Activities report down to, but excluding paragraph No. 6 of Doctor Nelson's report. John F. Burton, M.D., seconded the motion and it carried.

Avery B. Wight, M.D., moved that the report be accepted excluding any actual or implied reference to endorsement or rejection of the Blue Shield nationwide program. The motion was seconded and carried.

AMENDMENTS

Doctor Hart announced the next item on the agenda was a report from the Standing Committee on Constitution and Bylaws. (A copy of the amendments are attached and made a part of these minutes—see page 318). He said the amendments would be read by the Chairman of that committee, E. C. Mohler, M.D., and acted upon during the Closing Session of the House of Delegates Meeting.

After Doctor Mohler read the amendments, *E. K. Norfleet M.D., moved to submit the following amendment to the Constitution and Bylaws Reference Committee:*

"Amend Chapter V, Section 5.00 to read:

"Nominations shall be made in either the Opening or Closing Sessions of the House of Delegates of the Oklahoma State Medical Association."

Motion was duly seconded and carried.

The Speaker recognized C. Riley Strong, M.D., who told the House of Delegates that in order to obtain Legislative action on two proposed amendments to the Oklahoma Statutes, the Board of Medical Examiners needed approval of the Oklahoma State Medical Association of these proposed amendments; *he then moved to submit the amendments to the Reference Committee on Miscellaneous Business for recommendation and action. Louis Ritzhaupt, M.D., seconded the motion and it carried.* (The proposed amendments are attached, designated Resolution No. 24 and No. 25, and made a part of these minutes.)

RESOLUTIONS

The following resolutions were read by representatives of the respective county societies, to be acted upon in the Closing Session:

Resolution No. 1, sponsored by the Pottawatomie County Medical Society, entitled "Participation in Youth Fitness Program," referred to the Legislation and Public Policy Committee.

Resolution No. 2, sponsored by the Pottawatomie County Medical Society, entitled "Relative Value Schedules," referred to the Insurance and Medical Service Committee.

Resolution No. 3, sponsored by the Tulsa County Medical Society, entitled "AMPAC and OMPAC," referred to the Legislation and Public Policy Committee.

Resolution No. 4, sponsored by Tulsa County Medical Society, entitled "Free Choice of Physician," referred to the Legislation and Public Policy Committee.

Resolution No. 5, sponsored by Tulsa County Medical Society, entitled "Compulsory Retirement Age," referred to the Miscellaneous Business Committee.

Resolution No. 6, sponsored by Tulsa County Medical Society, entitled "Two-day Meeting of the OSMA House of Delegates," referred to the Constitution and Bylaws Committee.

Resolution No. 7, sponsored by Tulsa County Medical Society, entitled "OSMA Legislative Tour to Washington," referred to the Legislation and Public Policy Committee.

Resolution No. 8, sponsored by Tulsa County Medical Society, entitled "Funds for Medical Examiner Law," referred to the Legislation and Public Policy Committee.

Resolution No. 9, sponsored by Oklahoma County Medical Society, entitled "Seat Belts-Auto Safety Campaign," referred to the Miscellaneous Business Committee.

Resolution No. 10, sponsored by Oklahoma County Medical Society, entitled "Licensure Renewal Fee," referred to the Legislation and Public Policy Committee.

Resolution No. 11, sponsored by Oklahoma County Medical Society, entitled "Permissive Legislation-Narcotics Information," referred to the Legislation and Public Policy Committee.

Resolution No. 12, sponsored by Oklahoma County Medical Society, entitled "Concerning Government Employment Services," referred to the Insurance and Medical Service Committee.

Resolution No. 13, sponsored by Pottawatomie County Medical Society, entitled "Opposing Blue Cross-Blue Shield Service Plan for the Aged," referred to the Insurance and Medical Service Committee.

Resolution No. 14, sponsored by Pottawatomie County Medical Soci-

ety, entitled "Approval of OMPAC, AMPAC," referred to the Legislation and Public Policy Committee.

Resolution No. 15, sponsored by Washington-Nowata County Medical Society, entitled "AMPAC-OMPAC," referred to the Legislation and Public Policy Committee.

Resolution No. 16, sponsored by Washington-Nowata County Medical Society, entitled "Blue Cross-Blue Shield Indemnity Contract," referred to the Insurance and Medical Service Committee.

Resolution No. 17, sponsored by Washington-Nowata County Medical Society, entitled "The Bauer Statement," referred to the Legislation and Public Policy Committee.

Resolution No. 18, sponsored by Washington-Nowata County Medical Society, entitled "Relative Value Fee Schedules," referred to the Insurance and Medical Service Committee.

Resolution No. 19, sponsored by Creek County Medical Society, entitled "Constitutional Amendment," referred to the Constitution and Bylaws Committee.

Resolution No. 20, sponsored by Creek County Medical Society, entitled "Relative Value Fee Schedules," referred to the Insurance and Medical Service Committee.

Resolution No. 21, sponsored by Tulsa County Medical Society, entitled "Immunization Education Program," referred to the Miscellaneous Business Committee.

Resolution No. 22, sponsored by Grady County Medical Society, entitled "Department of Public Welfare Fee Schedule," referred to the Insurance and Medical Service Committee.

Resolution No. 23, sponsored by Oklahoma Society of Anesthesiologists, entitled "Relative Value Fee Schedules," referred to the Insurance and Medical Service Committee.

Doctor Hart announced the last order of business in the opening session would be the reading of the Necrology Report. Doctor Hart turned the chair over to Doctor C. M. Hodgson, Vice-Speaker, for this presentation.

NECROLOGY REPORT

Jack Odie Akins, M.D., Tulsa
Ray M. Balyeat, M.D., Oklahoma City
George S. Barber, M.D., Lawton
Charles N. Berry, M.D., Oklahoma City
Robert J. Bogan, M.D., Bartlesville
Wilbur F. Bohlman, M.D., Watonga
Donald W. Branham, M.D., Oklahoma City
Charles E. Calhoun, M.D., Sand Springs
Myron C. England, M.D., Woodward
Estelle S. Engles, M.D., Durant
Daniel B. Ensor, M.D., Alva
Samuel E. Frierson, M.D., Oklahoma City
Paulus K. Graening, M.D., Oklahoma City
Louis A. Hahn, M.D., Guthrie
James O. Hood, M.D., Norman
Horton E. Hughes, M.D., Shawnee
Stratton E. Kernolde, M.D., Oklahoma City
Phil M. Lambke, M.D., Oklahoma City
Daniel M. MacDonald, M.D., Portland, Oregon
Leonidas H. McConnell, M.D., Altus
Warren T. Mayfield, M.D., Winslow, Arkansas
Coleman P. Mitchell, M.D., Chickasha
Hiram D. Moor, M.D., Oklahoma City
Charles W. Morgan, M.D., Oklahoma City
James L. Reynolds, M.D., Tulsa
Alfred R. Sugg, M.D., Ada
Rush Loyd Wright, M.D., Poteau
Clarence C. Young, M.D., Shawnee
Samuel C. Shepard, M.D., Tulsa
Thomas F. Gross, M.D., Lindsay
John F. Gorrell, M.D., Tulsa

CLOSING SESSION

The Closing Session of the 56th Annual Meeting of the House of Delegates of the Oklahoma State Medical Association was called to order by the Speaker of the House, Marshall O. Hart, M.D., at 8:20 p.m., on May 5, 1962, in the Persian Room of the Skirvin Tower, Oklahoma City.

The Credentials Committee Chairman reported a quorum present.

The Speaker announced the first item of business in the Closing Session would be reports from the Reference Committees.

Reference Committee Reports

Report of
COMMITTEE ON LEGISLATION AND PUBLIC POLICY:

Doctor Wilkie D. Hoover, Chairman of the Reference Committee on Legislation and Public Policy, gave the following recommendations concerning resolutions referred to the committee:

Resolution No. 8. (See page 314).

Upon recommendation of the reference committee, it was moved and seconded that this resolution be adopted as read. Motion carried.

Resolution No. 1. (See page 312).

The committee recommended the resolution be amended as follows:

In the second "Whereas," delete the words "county medical society" and insert the words "The Oklahoma State Medical Association" in place thereof; in the third "Whereas," delete the balance of the paragraph beginning with the word "rather"; and in the "Resolve" delete the balance of the paragraph beginning with the word "but" in line three.

It was moved and seconded that the resolution be adopted as amended by the Reference Committee. Motion carried.

Resolution No. 4. (See page 313).

The committee recommended that this resolution be amended by deleting the words "embark upon a" and inserting the words "continue its" in the last "Resolve."

It was moved and seconded that the resolution be adopted as amended. Motion carried.

Resolution No. 7. (See page 313).

The committee recommended this resolution be amended by striking the remainder of the paragraph in the first "Resolve" beginning with the word "not" and by inserting a semicolon and the words "the OSMA shall finance congressional contact activities."

It was moved and seconded that Resolution No. 7 be approved as amended. Motion carried.

Resolution No. 11. (See page 315).

Upon recommendation of the committee, it was moved and seconded to approve the resolution as read. Motion carried.

Resolution No. 10. (See page 315).

Upon recommendation of the committee, it was moved and seconded to approve this resolution as read. Motion carried.

Resolution No. 17. (See page 316).

The committee recommended this resolution be amended by deleting the words "White House" in the third "Whereas," and insert the words "The Department of Health, Education and Welfare" in place thereof; in the "Resolve" insert the words "to inform the public correctly and" between the words "plans" and "to"; and by adding another "Resolve" as follows:

"BE IT FURTHER RESOLVED, that the doctors of the Oklahoma State Medical Association pledge themselves to continue to care for all patients regardless of ability to pay."

It was moved and seconded to approve the resolution as amended. Motion carried.

Resolutions No. 3, 14, and 15. (See No. 3, page 312).

Due to the similarity of these resolutions, the committee recommends the approval of Resolution No. 3 to cover all three resolutions.

It was moved and seconded that Resolution No. 3 be approved to cover all three resolutions. Motion carried.

Report of
COMMITTEE ON MISCELLANEOUS BUSINESS:

Doctor Malcom Phelps, Chairman of this committee, gave the following recommendations concerning resolutions referred to the committee.

Resolution No. 5. (See page 313).

The committee recommends the amendment of this resolution by deleting the "Resolve" and substituting the following:

"NOW THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association formally approves an educational campaign directed by an appropriate committee opposing compulsory retirement at an arbitrary age, and urges a policy of retirement on an individual basis with due respect to the physical and mental condition of the employee."

It was moved and seconded that the resolution be adopted as amended by the reference committee. Motion carried.

Resolution No. 9. (See page 314).

The committee offered a substitute resolution for approval.

It was moved and seconded that the substitute resolution be adopted. Motion carried.

Resolution No. 21. (See page 317).

The reference committee offered a substitute resolution for approval.

It was moved and seconded that the substitute resolution be adopted. Motion carried.

Resolution No. 24. (See page 317).

Upon recommendation of the committee, it was moved and seconded to approve this resolution. Motion carried.

Resolution No. 25. (See page 317).

Upon recommendation of the committee, it was moved and seconded to approve this resolution. Motion carried.

Report of
INSURANCE AND MEDICAL SERVICE COMMITTEE:

Thomas C. Points, M.D., Chairman of the committee, gave the following report:

Resolution No. 22. (See page 317).

It was the recommendation of the committee that no action be taken on this resolution, other than to call it to the attention of the OSMA Liaison Committee to the Department of Public Welfare.

A motion was made to call this resolution to the attention of the OSMA Liaison Committee to the Department of Public Welfare. Motion was seconded and carried.

Resolutions No. 2, 18, and 20. (See No. 2, page 312).

Due to the similarity of these resolutions, the committee recommends the approval of Resolution No. 2, to cover all three resolutions.

It was moved and seconded that Resolution No. 2 be adopted to cover Resolutions No. 2, 18, and 20. Motion carried.

Resolutions No. 16, 13, and 23. (See No. 16, page 316).

Due to the similarity of these resolutions, the committee recommended that Resolution No. 16 be approved to cover all three resolutions; that No. 16 be amended by deleting the words "Blue Cross" wherever it appears in the resolution, and by deleting the words "and the American Hospital Association" in line 2 of the first "Whereas."

It was moved and seconded that Resolution No. 16 be approved as amended. Motion Carried.

Resolution No. 12. (See page 315)

The committee offered a substitute resolution for approval.

It was moved and seconded that the substitute resolution be approved. Motion carried.

Report of
CONSTITUTION AND BYLAWS COMMITTEE:

Joe L. Duer, M.D., Chairman of the committee, gave the following report.

Doctor Duer said, first, the committee would like to recommend approval of the following motion:

"That the Standing Committee on Constitution and Bylaws be asked to prepare an amendment, to be presented at the next House of Delegates meeting, providing that a resolution may be introduced by a Delegate from the floor of the House with the approval of a three-quarters majority vote of members present." Motion was seconded and carried.

Proposed Amendments No. 1 through No. 11. (See page 318).

Upon recommendation of the committee, it was moved and seconded that Amendments No. 1 through No. 11 be approved as read. The motion carried.

Proposed Amendment No. 13. (See page 318).

Upon recommendation of the committee, it was moved and seconded to approve the proposed amendment. Motion carried.

Resolution No. 6. (See page 313).

Upon recommendation of the committee, it was moved and seconded to approve Resolution No. 6. Motion carried.

Resolution No. 19 and Proposed Amendment No. 12. (See pages 316-318).

Due to the similarity of these two items, the committee considered them together. They were jointly presented by the Reference Committee to the House of Delegates without recommendation, and the committee pointed out that if such a resolution was implemented, it would necessitate a new Article in the Constitution.

Doctor Glismann moved to refer these items to the Standing Committee on Constitution and Bylaws. Motion was seconded.

Doctor E. K. Norfleet then made the following substitute motion:

I move that the following be submitted under Article III of the Constitution and Bylaws: The Oklahoma State Medical Association shall not enter into a contract with any person, firm, or agency, with respect to the practice of medicine or fees for such practice. The motion died for a lack of a second.

Doctor Glismann's motion was then opened for discussion and vote. *Motion carried by a majority affirmative vote.*

Doctor Hart announced that the next order of business would be the election of officers. He stated that there would be no further nominations for officers in the House of Delegates of the Oklahoma State Medical Association.

The first office to be filled was that of PRESIDENT-ELECT. Joe L. Duer, M.D., and Peter E. Russo, M.D., were announced as those nominated during the Opening Session. A ballot vote was taken and the Tellers were instructed to tabulate the votes. *Doctor Russo received 58 votes; Doctor Duer 34 votes. Doctor Hart then announced that Peter E. Russo, M.D., was elected President-Elect.* The Sergeant At Arms then escorted Doctor Russo to the platform.

The next office was that of VICE-PRESIDENT. It was moved and seconded that Frances P. Newlin, M.D., nominated during the opening session, be elected by acclamation. The motion carried. The Sergeant At Arms then escorted Doctor Newlin to the platform.

Wilkie D. Hoover, M.D., was voted by acclamation to succeed himself as DELEGATE TO THE AMA. The Sergeant At Arms escorted Doctor Hoover to the platform.

Francis Davis, M.D., was voted by acclamation to the office of ALTERNATE DELEGATE TO THE AMA. The Sergeant At Arms escorted Doctor Davis to the platform.

Mark R. Johnson, M.D., was voted by acclamation to succeed himself as SECRETARY-TREASURER. The Sergeant At Arms escorted Doctor Johnson to the platform.

Marshall O. Hart, M.D., was voted by acclamation to succeed himself as SPEAKER OF THE HOUSE OF DELEGATES.

C. M. Hodgson, M.D., was voted by acclamation to succeed himself as VICE-SPEAKER OF THE HOUSE OF DELEGATES.

The next order of business was the election of Trustees for Districts No. 1, 4, 7, 10, and 13.

The following Trustees were elected by acclamation:

DISTRICT NO. 1:
Wylie G. Chesnut, M.D., Miami
L. B. Word, M.D., Bartlesville

DISTRICT NO. 4:
Walter H. Dersch, Jr., M.D., Shattuck
John X. Blender, M.D., Cherokee

DISTRICT NO. 7:
Jerold D. Kethley, M.D., Shawnee
E. K. Norfleet, M.D., Bristow

DISTRICT NO. 10:
Thurman Shuller, M.D., McAlester
C. E. Lively, M.D., McAlester

DISTRICT NO. 13:
J. T. Hicks, M.D., Lawton
W. R. Cheatwood, M.D., Duncan

The Trustees came to the front as they were elected, and then Officers and Trustees were formally presented to the House of Delegates.

The 56th Annual Meeting of the House of Delegates of the Oklahoma State Medical Association was adjourned by the Speaker, Marshall O. Hart, M.D., at 10:00 p.m.

Recorded by Martina Doyle

Report of BOARD OF TRUSTEES *ACCOMPLISHMENTS*

The Oklahoma State Medical Association continues as a democratic organization. During the past year, about three hundred physicians were engaged in policy - making activities or committee work. Almost without exception, members have responded quickly and effectively to the responsibilities assigned to them by election or by appointment.

It has been an active year, and it is predictable that the affairs of organized medicine will continue to expand in diversity and complexity.

Much has been accomplished during the 1961-62 organizational year, as will be reported later by the five Council Chairmen, and much remains to be done. In addition to the Council reports, your attention is called to the following matters at this time:

Five-Point Program: The President's 5-Point Program focused special attention on programs of: (1) Medical Career Counseling; (2) Financial Aid to Education; (3) Medical Law Familiarization; (4) Professional Responsibility Indoctrination; and, (5) Professional Education. The degree of success in achieving these new and carry-over goals ranged from "encouraging" to "exceptional."

Journal Award: A singular honor was bestowed upon the *Journal* of the Oklahoma State Medical Association in October, when it was named by a national typographical consultant firm as the outstanding state medical society publication in the United States. In extending its congratulations at this time to the Editorial Staff, the Board of Trustees regretfully announces the resignation of Editor-in-Chief Ben H. Nicholson, M.D., who had much to do with earning the national citation.

Woman's Auxiliary: The Woman's Auxiliary to the Oklahoma State Medical Association, our companion organization, has served well, and has made valuable contributions toward our common goals. The organization merits the support and encouragement of all physicians.

Annual Meeting: The 56th Annual Meeting of the OSMA, which begins today, represents the most diversified program ever offered to the membership. The committees in charge of its planning and conduct have shown great imagination as well

as the courage to engage in experimentation, at a time when all efforts must be made to recapture the interest of Oklahoma physicians. The efforts of J. R. Stacy, M.D., General Chairman; Rex E. Kenyon, M.D., Program Chairman; and of all others concerned, are deeply appreciated by the Board of Trustees.

MEMBERSHIP

The following membership figures are reported as of this date:

Dues-Paying Members	1,731
Application Pending	30
Honorary-Life Members	111
Junior Members	39
Associate Members	4
Total Membership	1,915

Honorary - Life Memberships have been requested by county medical societies for the following physicians:

Paul N. Atkins, Sr., M.D., Tulsa;
H. T. Ballantine, M.D., Muskogee;
James G. Binkley, M.D., Oklahoma City;
H. N. Bussey, M.D., Altus;
W. W. Cotton, M.D., Poteau;
F. L. Flack, M.D., Tulsa;
Jesse B. Hollis, M.D., Mangum;
Wallis S. Ivy, M.D., Duncan;
Phil M. Lambke, M.D., Oklahoma City (posthumously)
Earl W. Mabry, M.D., Altus;
Grady F. Mathews, M.D., Oklahoma City;
Fred L. Patterson, M.D., Duncan;
James L. Patterson, M.D., Duncan;
M. P. Springer, M.D., Tulsa;
Howell A. Scott, M.D., Muskogee;
Leon H. Stuart, M.D., Tulsa;
Charles Donovan Tool, M.D., Edmond.

FINANCES AND BUDGET

Upon approval of the Board of Trustees, the Secretary-Treasurer of the OSMA embarked upon a complete re-evaluation of association fiscal policies and procedures last Fall. Among the recommendations made was the employment of the firm of Carleton and Peters, Certified Public Accountants, as auditors of the Association.

The financial status of the Oklahoma State Medical Association for the year ending December 31, 1961, is reflected in the following summation of the certified financial report prepared by Carleton and Peters:

INCOME	
Membership Dues	$70,861.25
Journal	35,635.04
Annual Meeting	7,902.50
Interest From Savings	1,961.30
Miscellaneous	3,251.50
Total	$119,611.59
EXPENSES	
Organizational	$68,070.38
Journal	44,003.84
Annual Meeting	14,187.07
Total	$126,261.29
Net Loss	($ 6,649.70)
SAVINGS	
Ponca City Savings and Loan	$10,000.00
Home Savings and Loan, Lawton	10,000.00
Home Savings and Loan, Bartlesville	10,000.00
Durant Building and Loan	10,000.00
Tulsa Federal Savings and Loan	10,000.00
Oklahoma City Federal Savings and Loan	1,860.27
Total	$51,860.27

The net loss is primarily due to a loss in the national advertising revenue of the *Journal*. For the year ending December 31, 1960, the total income of the Association was $133,080.27 and the expenses were $128,756.97. Thus, it can be seen that 1961 expenses were slightly less than those of 1960, but the loss of nearly $14,000 in income has resulted in a net loss for 1961.

Declining advertising sales is a national problem, affecting all medical publications in approximately the same ratio as the OSMA publication. The dilemma has been brought on by Congressional investigation of the drug industry's advertising policies.

The future advertising prospects are guardedly encouraging, although the State Medical Journal Advertising Bureau, Inc., our national sales agency, is most pessimistic that billings will completely return to the lucrative level of the pre-investigation era.

During recent years, the Association has become increasingly dependent on *Journal* advertising in the financing of its overall program. The withdrawal of a portion of this income, and the resultant net loss in the financing of Association activities during 1961, points up the difficulty of building a stable overall program upon a fluctuating level of income.

The other major source of revenue, membership dues, has remained constant since 1948 (last year's increase of $5 per member is earmarked for scholarships and loans). While a dues increase at this time does not appear mandatory, it must be pointed out that another austere year in *Journal* advertising revenue may bring about another net loss in organizational activities.

Another indication of the close balance of income and expense is reflected in the budget presented on the opposite page which were developed in cooperation with the incoming President of the OSMA.

In addition to the expenses reported above, the Association faces a possible paving tax during the next year, estimated at $2,500.00. Moreover, certain outdated office equipment is in need of replacement, if possible.

Recommendation: It is most difficult to budget for an organizational year (May to May), when the accounting system is on a calendar year. Therefore, it is recommended that the Association report its financial status on a fiscal year, with the books being closed on May 31st. By doing so, it will be possible to relate the Association's budget period to the accounting period, enabling the officers and staff to more effectively control Association funds.

Such an action will make it necessary to mail the year-end financial statement to the Delegates following the annual meeting, but it will still be possible to present an estimated statement at the time of the annual meeting.

* * * *

The preceding report has the endorsement of the Board of Trustees as of its meeting on May 4th. In

BUDGET A—ORGANIZATIONAL ACTIVITIES

INCOME		
Membership Dues		$69,300.00
Subscription For OSMA Journal—From Dues		1,700.00
Scholarship, Loan Fund—From Dues		8,000.00
Interest Income		2,000.00
Miscellaneous Income		1,800.00
Annual Meeting—Booth Rental	$8,500.00	
Ticket Sales	2,500.00	11,000.00
TOTAL INCOME		$93,800.00
EXPENSE		
Fixed Expenses		$56,500.00
Councils and Committees:		
Public Policy	$2,500.00	
Insurance	500.00	
Professional Education	2,400.00	
Socio-Economic Activities	500.00	
Public Health	500.00	6,400.00
In-State Travel		2,000.00
Out-of-State Travel		6,000.00
Annual Meeting:		
Guest Speakers	2,200.00	
Hotel	1,200.00	
Decorations	1,200.00	
Dinner, Luncheons	2,600.00	
Entertainment	1,600.00	
Printing	1,000.00	
Miscellaneous	1,000.00	10,800.00
Scholarships & Loans		8,000.00
TOTAL EXPENSE		89,700.00
NET SURPLUS		4,100.00

BUDGET B—JOURNAL, MEMBERSHIP DIRECTORY

INCOME		
Journal		
National Advertising	$25,000.00	
Direct Advertising	10,500.00	
Subscriptions	2,000.00	37,500.00
Membership Directory		
Advertising	925.00	
Sales of Copies	200.00	1,125.00
TOTAL INCOME		$38,625.00
EXPENSE		
Journal		
Printing	$25,000.00	
Engraving	1,800.00	
Art	600.00	
Salaries	7,800.00	
Payroll Taxes	350.00	
Travel, Dues	500.00	
Miscellaneous	400.00	$36,450.00
Membership Directory		
Printing		1,360.00
TOTAL EXPENSE		$37,810.00
NET SURPLUS		815.00

addition, the Board reviewed the proposed amendments to the Constitution and Bylaws, the proposed resolutions and the reports of the Councils and committees which are contained in the Delegates portfolios. These business items are referred to the House of Delegates for final decision.

One item which was brought to the attention of the Board of Trustees has to do with the appointment of the business manager of the *Journal.* At the present time, the bylaws state that the Executive Secretary shall be the business manager.

In the opinion of the Board of Trustees, this policy is not flexible enough and it is herewith suggested that the Bylaws be amended to the extent that the business manager of the *Journal* shall be named by the Board of Trustees. It is requested that the Constitution and Bylaws Reference Committee prepare the necessary amendment and report back during the closing session of the House of Delegates.

In another action, the Board of Trustees, in its meeting of May 4, accepted the resignation of Doctor Ben H. Nicholson as Editor-in-Chief of the *Journal.* To succeed Doctor Nicholson, the Board named C. B. Dawson, M.D., Oklahoma City, as Editor-in-Chief for a two-year term. John G. Matt, M.D., Tulsa, was named as a member of the Editorial Board for a one-year term, and Roy O. Kelly, M.D., Shawnee, was named a member of the Editorial Board for a three-year term.

COUNCIL REPORTS

Report of COUNCIL ON PUBLIC POLICY

Council Members

R. Q. Goodwin, M.D., Chairman
Marshall O. Hart, M.D.
John E. McDonald, M.D.
M. H. Newman, M.D.
Thomas C. Points, M.D.
Elmer Ridgeway, Jr., M.D.
William A. Matthey, M.D.

The Council on Public Policy is comprised of the following committees:

Federal Legislative: Thomas C. Points, M.D., Chairman

State Legislative: Elmer Ridgeway, Jr., M.D., Chairman

Medico-Legal Relations: Marshall O. Hart, M.D., Chairman

SECTION I.

Federal Legislative Committee: The financing of health care through the Social Security mechanism continues to be the major national legislative problem. Presently, the politically-inspired King-Anderson Bill, HR 4222, is on the threshold of congressional approval.

If enacted, the measure will provide hospital care, nursing home care and limited out-patient care to about 14½ million Americans over age 65, regardless of whether they want or need financial assistance. The program will be operated under the direct and dictatorial control of the Secretary of the Department of Health, Education and Welfare.

Pressure continues to mount for this bill, despite the increasingly effective implementation of the Kerr-Mills Law. In Oklahoma, almost forty per cent of the state's entire over-65 population is eligible to receive medical and hospital care under the Department of Public Welfare's implementation of the Kerr-Mills Law.

To combat the threat of HR 4222, the Federal Legislative Committee, with the cooperation of the American Medical Association, has launched an intensive campaign, which includes the following features:

1. All County Medical Societies and Auxiliaries were asked to send resolutions to Washington. To date, twenty-three out of forty-five county medical societies are known to have complied; eleven out of twenty-three county auxiliary chapters have complied.

2. State organizations of all types were asked to support medicine's view in the form of resolutions. Many have passed such resolutions and sent them to Oklahoma's Representatives and Senators.

3. County medical societies were asked to form "six-man action committees" for the purposes of: Forming Speakers Bureaus; Establishing Better Press Relations; Obtaining Resolutions from county organizations of all types; and, Developing an Effective, Sustained Letter-Writing Program. To date, thirty-three such committees are in operation.

4. Special promotions in the OSMA Journal have been employed to inspire action and to assist physicians in their efforts to defeat HR 4222.

5. Periodic press releases have been issued to all types of news media; television has been employed, when possible.

6. Staff members from the OSMA Executive Office have conducted fourteen regional meetings on the legislative campaign, and have distributed speakers kits, resolution kits, letter-writing guides and miscellaneous other materials designed to make the counties' work easier.

Recommendations: The most important recommendation herewith submitted is that more, but better yet, all physicians take an active part in the continuing fight for the free enterprise private practice of medicine without the strangling of federal government regulations and subsidizations. There are many physicians taking an active part in this and the same is true with us, as many other groups, those that are present in this House of Delegates don't need to be prodded, but plenty of others do. It is a basic fact that physicians' main all-consuming energy is jealously guarded in order to save people's lives and that each and every individual is the important reason for him being a physician. However, at this time if all physicians don't take an active part in the battle, the existence of an opportunity and right to perform their best for the individual, will be taken away. Physicians won't suffer as much as the public will.

In addition to the basic concept as stated above, it's good to have the money and the things money can buy from the practice of medicine, but it's good to check-up once in awhile and make sure you have not lost the things money can't buy, such as freedom to keep on practicing good medicine unrestricted by Federal Government encroachment. One dissatisfied family, resulting from overcharging can (from the public's sentiments) undo most of the good all other physicians have accomplished. The present battle is not the last one, whether we win or lose, because there is no final battle in this fight for freedom. The struggle will continue as long as there are enemies who seek to subvert our minds and destroy our ideals. Our enemies strongest allies can be our indifference of spirit, weakening of will and compromise of principle.

Through physicians' natural timidity to mix medicine with government controlled policies, we tend to compromise a backward step here and there to the point that all of us can awaken to the fact that the foundation of free enterprise medicine has crumbled.

When a group of physicians gather they discuss this threat, but when they are asked to speak in public, write their congressmen, take an active part in the workings, they plead "too busy," "I'm not good at this," "It won't do any good," and many other excuses. As a rule, your fellow physicians don't need to be convinced, but their patients, friends, enemies and congressmen do need convincing. It's not a case of "let's you and him fight while I stand outside and cuss if you lose."

Our courage, determination and steadfast faith in our way of life, with an unbending resolve to defend it along with our convictions to remain strong so we may pass on to the public, our patients, and to our children, both the fruits of excellent medical care and the freedom of their choice of physicians, hospitals, and other medical facilities, is the basis of our recommendation. Our destiny is in our own hands.

SECTION II.

State Legislative Committee: The Oklahoma State Medical Association was treated well by the last State Legislature. The following measures were enacted, all of which received the strong support of the State Legislative Committee and of the association as a whole.

1. The Good Samaritan Law
2. The Professional Corporation Act
3. The Medical Examiners Act

Since the adjournment of the last session of the Legislature, the com-

mittee has been asked to consider the proposed Nurse Practice Act, which is tentatively scheduled to be introduced when the Legislature convenes in January.

The committee has met with representatives of the Oklahoma State Nurses Association and the Oklahoma Hospital Association for the purpose of discussing the act in question. The proposed new Nurses Practice Act is jointly sponsored by the Oklahoma State Nurses Association and the Oklahoma Association of Licensed Practical Nurses.

Under the present law, it is said to be possible for a person to practice professional or practical nursing as long as she does not use the initials R.N. or L.P.N. or use any other sign or device to indicate she is a registered or practical nurse.

The new proposal provides for mandatory licensure of registered nurses and licensed practical nurses, and establishes penalties against both employee and employer in cases where a non-licensed person is found to be performing duties of either of the two professions as defined in the act.

In addition, the proposed act establishes the Oklahoma Board of Nursing, defines its composition, and empowers it to enforce the licensure provisions of the act and to accredit and supervise the nursing schools of Oklahoma.

A great deal of concern has been expressed about this proposal. It is said that the new Nurse Practice Act would demand a greater quantity of R.N.'s and L.P.N.'s than are presently available; that many hospitals would have to close because of the nursing requirements enforced against them; and, that the cost of hospital care would be increased as a result of the act.

On the other hand, the sponsors of the bill deny these allegations, and believe that the new law would elevate the standards of nursing care available throughout the state without increasing the cost of hospital care and without depleting the reserve of trained personnel.

Recommendations: The State Legislative Committee has had very little time to consider the merits of the proposed Nurses Practice Act. While it commends the nurses for their desire to elevate the standards of nursing care throughout the state, it respectfully requests that the House of Delegates assign this project to the incoming State Legislative Committee for further study.

Furthermore, the committee believes that much progress toward the goal of elevating the standards of patient care may be accomplished by activating the newly-formed Joint Committee of Nurses, Physicians and Hospital Administrators. It is recommended that this committee and its projected goal receive the enthusiastic support of the Oklahoma State Medical Association.

Report of COUNCIL ON INSURANCE

Council Members

Bruce R. Hinson, M.D., Chairman
Ralph A. Smith, M.D.
W. R. Cheatwood, M.D.
Dave Lhevine, M.D.
William S. Dandridge, M.D.
C. C. Yeary, M.D.

The Council on Insurance is comprised of the following Committees:
Professional Liability: Ralph A. Smith, M.D., Chairman
Group Insurance: E. C. Yeary, M.D., Chairman

Section I

Professional Liability: Several significant actions have been taken during the past year in regard to the professional liability insurance program written for the physicians of Oklahoma by the St. Paul Insurance Companies.

First, as of December 1, 1961, the company has discontinued its previous policy of permitting its professional liability insurance to be "brokered" through non-St. Paul agents. Physicians participating in the program must now purchase protection directly from St. Paul agents. In brief, the company reports the following reasons for this change in policy:

1. Better control of the business by the company.
2. Better informed agents; better service and protection for physicians.
3. Acquisition of more collateral insurance coverage to offset the risk involved in offering broad-protection professional liability insurance at a comparatively low premium.

The company feels this action on its part will strengthen the professional liability program. Oklahoma is well covered by St. Paul agents, so there should be little inconvenience to physicians.

Another action of the company during the past year should be reported.

In the past, an excessive loss ratio, regardless of its geographic origin, resulted in a general rate increase across the state. The new policy fixes responsibility at the county level, and where one county is experiencing a loss ratio which is significant enough to be a threat to the premium stability of the state as a whole, the county must shoulder higher premium rates to offset its claim experience. The premiums of one Oklahoma county have been adjusted upward under the new company policy.

In another action, the Council on Insurance, the Professional Liability Committee and St. Paul renegotiated a new agreement as to the relationship of the company and the association in the management of the professional liability insurance program.

It should be pointed out that no master contract exists between the association and St. Paul. The insurance company issues individual policies to physicians who apply and who meet underwriting requirements.

The cooperative arrangement between the company and the association has to do with:

1. The certification of insurability of members of the Oklahoma State Medical Association.
2. The encouragement of extensive participation in the program, to insure the stability of the risk.
3. The education of physicians in professional liability matters, to reduce incidence of claims.
4. The joint review and discussion of claims by the defendant, the association's Professional Liabil-

ity Committee, and representatives of the company.

Final authority in all matters rests with the company, but the association will be consulted on claims prevention and defense, premium adjustments, selection of defense counsel, etc.

Here are some statistics on the present status of the program:

Participation: More Than 80 per cent of OSMA Members Claims Experience Since Last Annual Meeting:

Total Claims Reported	94
Number of Suits Filed	15
Claims Settled before Suit	13
Number of Suits Tried	5
Number of Suits Won	5
Suits Settled Before Trial	3

Section II

Group Insurance: There are existing group insurance programs for life insurance and disability income insurance, and a new overhead expense plan has been inaugurated during the past year.

1. *Term Life Insurance:* Underwritten by the Massachusetts Mutual Life Insurance Company since 1956, the term life insurance program shows a favorable growth in participation and a favorable decline in claims paid. As of March 15, 1962, there were over 400 physicians insured under the program. For the year ending March 15, 1962, the program has paid total claims of $55,000 on three lives. Since the inception of the program, over $350,000 has been paid in benefits.

Because of favorable claim experience, the annual premium has been reduced by five per cent for the year from March 15, 1962 until March 15, 1963. Moreover, in the process of changing the anniversary date from March 15th to April 1st (to achieve first-of-the-month billing), insured physicians were given two weeks' free coverage. The combination of reduction in premium and extension of the anniversary date amounted to a nine per cent dividend for the 1962-63 year.

2. *Disability Income Insurance:* The transition from the previous group disability income insurance carrier to the Insurance Company of North America is successfully being accomplished with a minimum of inconvenience to association members. More than 800 physicians are now enrolled in the new program, and others are continuing to make the change as their old policies expire.

The new program with INA is being effectively managed by the C.L. Frates & Company Insurance Agency, Oklahoma City. Physicians are offered up to $600 per month in benefits, with $200 per month guaranteed, regardless of insurability. The changeover enabled association members to be protected by a well established, financially strong company. At the same time, the premium rates were reduced.

3. *Overhead Expense Program:* On February 1, 1962, a group overhead expense insurance program was placed in force by the C. L. Frates Agency through the Continental Casualty Company.

Overhead expense protection provides money to help physicians pay customary, fixed business expenses during periods of disability. Up to $1,000 per month for eighteen months is offered under the new program. Premiums are tax deductible as a direct business expense.

This program is designed to complement the association's disability income insurance plan.

Report of
COUNCIL ON PUBLIC HEALTH

Council Members

Charles E. Green, M.D., Chairman
J. Walker Morledge, M.D.
Robert D. Shuttee, M.D.
Earl D. McBride, M.D.
G. R. Russell, M.D.
Gifford H. Henry, M.D.
George H. Guthrey, M.D.
Joe M. Parker, M.D.
Paul D. Erwin, M. D.
George B. Gathers, Jr., M.D.

The Council on Public Health is comprised of the following committees:

Aging: J. Walker Morledge, M.D., Chairman

Mental Health: George H. Guthrey, M.D., Chairman

Cancer: Joe M. Parker, M.D., Chairman

School Health: Robert D. Shuttee, M.D., Chairman

Rehabilitation: Earl D. McBride, M.D., Chairman

Disaster Medical Care: Gifford H. Henry, M.D., Chairman

Liaison Committee to the Health Department: Paul D. Erwin, M.D., Chairman

Highschool Athletic Injuries: George B. Gathers, Jr., M.D., Chairman

Perinatal Mortality: John W. Records, M.D., Chairman

SECTION I

Rehabilitation Committee: The committee wishes to announce that the 1961 House of Delegates recommendation to create a Diagnostic Rehabilitation Center at the O.U. Medical Center has been accomplished. The Medical Center's new Department of Industrial Medicine, under the direction of Thomas N. Lynn, M.D., has been providing such a service since July 1, 1961.

In another activity, it was brought to the committee's attention that the Workmen's Compensation Act does not provide for extensive rehabilitation of badly injured persons; that such persons often do not seek medical attention and soon deplete their cash settlements without re-establishing their self-sufficiency.

The Rehabilitation Committee met with Mr. Jack Boyd, representative of the Legislative Council's Committee on Rehabilitative Services. He outlined a proposed study of the Workmen's Compensation Act, and pledged the legislative group's cooperation in improving rehabilitation provisions of the act.

Recommendations: The Rehabilitation Committee recommends:

1. That the Oklahoma State Medical Association, through its Rehabilitation Committee, cooperate in the study and revision of the Workmen's Compensation Act, toward the goals of establishing rehabilitation services for the industrially injured, to include the consideration of multipurpose

workshops, the extension and improvement of local health services, and the achievement of cooperative agreements from public and private agencies involved in rehabilitative services.

2. That the Oklahoma State Medical Association express confidence in the present administration of the Rehabilitation Division of the Board of Education, and approve the division's efforts in establishing the Voluntary Hospital Counselors program; in establishing the Mobile Evaluation Unit; and in helping create the Diagnostic Rehabilitation Center at the O. U. Medical Center.

Furthermore, the committee recommends that the Oklahoma State Medical Association officially commend Mr. Voyle C. Scurlock and his staff for their progressive and aggressive program which enhances the complete field of rehabilitation.

SECTION II.

Disaster Medical Care: The United States Public Health Service is now engaged in training the U. S. civilian population to be more self-reliant in protecting and maintaining health in the event of a major nuclear exchange or similar national disaster. The project, termed Medical Self-Help Training, is endorsed by the American Medical Association and by the OSMA Disaster Medical Care Committee.

In Oklahoma, the ultimate goal is to teach the nuclear warfare-oriented first aid course to about 300,000 persons. Special training kits are being used, and classes of twenty-five persons each are now being organized and instructed.

The state project is being managed by the Extension Division of the University of Oklahoma, under the guidance of Oklahoma Civil Defense, the State Department of Health and the Disaster Medical Care Committee of the OSMA. No courses are taught in an Oklahoma county without prior approval of the county medical society.

On January 21, 1962, the OSMA Disaster Medical Care Committee held a statewide briefing session on the project for county society officers, county health department directors, and county civil defense representatives.

Another project considered by the Disaster Medical Care Committee during the past year is the proposed Center for Civil Defense Health Studies, a three year training program to be operated by O.U.'s Extension Division.

The purpose of the proposal is to prepare Oklahoma's individuals and communities to survive on their own resources for a period of up to one month following nuclear attack, and to set up a prototype teaching plan and curriculum which may be used by other state universities.

In general, Health Mobilization Teams are to be organized on a community basis and brought to O. U. for one week's intensive training in all aspects of disaster medical care. The teams will then return home and serve as nuclei for further training programs at the local level.

In addition, the Center for Civil Defense Health Studies will organize short courses for professional societies, and will integrate civil defense courses into other adult education activities being managed by the O. U. Extension Division.

The OSMA's Disaster Medical Care Committee and its counterpart of the American Medical Association see this proposal as a more effective approach to civil defense training than the present plan of maintaining three Offices of Civil Defense Mobilization Training Centers in the United States. These regional centers train instructors from the states who seldom have opportunity to effectively disseminate the information at the local level.

The three year prototype program, if approved as an OCDM project, will be financed with approximately $1,000,000 in Federal funds. As the teaching plan and curriculum are developed by O. U., the project may be implemented by other state universities at nominal expense. It should be pointed out that such Federal funds will be taken from previously committed budget allocations. Thus, the proposal represents a more effective diversion of public funds, rather than the solicitation of new funds.

University of Oklahoma officials have sought and obtained endorsement of the project from the Disaster Medical Care Committee of the American Medical Association. The OSMA committee has approved the project also, but has not rendered any written endorsement.

Recommendations:

1. That the Oklahoma State Medical Association enthusiastically approve of the Medical Self-Help Training Program, and encourage county medical societies to cooperate in local programming.

2. That the Oklahoma State Medical Association endorse the principle of focusing civil defense training at the state level; as proposed by the Center for Civil Defense Health Studies, University of Oklahoma.

SECTION III

Perinatal Mortality Committee: This committee has recently been reactivated, and several approaches to a professional educational program are underway, as follows:

1. Consideration will be given to the preparation of a guide on recommended standard operating procedures for nurseries.

2. The committee will undertake an educational program for hospital staffs of comparable hospitals, whereby anonymous cases and statistics on all aspects of perinatal mortality may be interchanged and discussed. Objective appraisals of the cases can be made by committee members and special consultants. Such programs would be presented only upon request of local medical groups.

3. Along the same line, statistics and recommendations on perinatal mortality and morbidity will be made available to hospitals upon request.

4. The committee supports the principle of obtaining legislation designed to protect individuals participating in studies for the purpose of reducing mortality and morbidity of patients and for the advancement of

medical education and research.

5. The committee approves the following statement on the care of the eyes of the newborn:

"This committee recommends the use of one per cent (1%) solution of nitrate of silver or ten per cent (10%) strength sodium sulfacetamide ointment in the eyes of newborn children, and is opposed to the use of the three other antiseptics listed in Senate Bill 153, namely, Penicillin opthalmic ointment, Aureomycin opthalmic ointment, and Terramycin opthalmic ointment."

Recommendation: The committee asks House of Delegates approval of the projects undertaken.

SECTION IV (Disapproved)
SECTION V

Recommendation of the Council on Public Health in regard to polio immunization:

1. There is now no imminent danger of polio epidemic in Oklahoma because of the current high level of immunization. This level should be maintained and increased by all available means, including the use of killed parenteral virus vaccine.

2. It is believed that oral monovalent vaccine is best used and is most effective on a community basis. Therefore, private physicians, county medical societies and health departments should plan their immunization programs according to availability of the vaccine. It is recommended that medical supervision and direction be provided for community immunization programs.

3. Where the total community programs can be organized and initiated by May 21, 1962, Type I should be given; with Type III given as a second dose during the month of June, 1962. The third dose. Type II, should be given in the Fall, because it is not advisable to administer oral polio vaccine during the normal polio season: July, August, September, and possibly October.

4. All three types of oral monovalent polio vaccine are now licensed for use, but should only be given after careful review of the manufacturer's package insert.

Report of
COUNCIL ON PROFESSIONAL EDUCATION
Council Members

R. R. Hannas, M.D., Chairman
Irwin H. Brown, M.D.
Gregory E. Stanbro, M.D.
John R. Taylor, M.D.

The Council on Professional Education is comprised of the following committees:

Postgraduate Education: R. R. Hannas, M.D., Sentinel, Chairman.

Medical School Liaison: Gregory E. Stanbro, M.D., Oklahoma City, Chairman.

American Medical Association Education and Research Foundation: John R. Taylor, M.D., Kingfisher, Chairman.

Your Council on Professional Education, in serving the members of the Oklahoma State Medical Association, has kept uppermost two objectives— increasing the *quantity* and *quality* of medical care in this State. The committees of this Council have functioned as follows:

A. *Committee on Postgraduate Education.*

1. Eight Regional Postgraduate Education Programs have been held and these meetings have been universally well attended and well received. Bartlesville, Enid, Chickasha, Burns Flat, Ardmore, Ada, Wagoner, and Miami were the cities and the subjects included Lung, Liver, Kidney and Colon, with each of these subjects presented twice. By offering organ systems as subjects, we were able to interest the largest number of physicians, general practitioners and specialists alike. These programs cost the Association a total of approximately three hundred dollars, and detailed financial reports for each meeting are available to those who desire this information. The enthusiasm with which our members have received these programs have convinced this committee that the courses should be continued next year, and our policy of providing as broad geographical coverage as possible dictates that they be held in eight new locations.

2. An innovation this year has been the presentation of six experimental medical education television programs via channels 11 and 13, the Educational Television Channels of this State. Evaluation of these programs has not yet been completed, but preliminary reports indicate that at least five hundred physicians can receive these programs, and the coverage of the two TV channels is being increased gradually to the point where most of the State will eventually have this service available. Participating doctors have indicated approval of this medium, and it is hoped that we can improve on the first six programs by preparing more of our own programs in the future. As we become more proficient, live programs may be produced; and, added to this, is the possibility of questions telephoned in by the audience during a live session, with answers provided during the latter part of the same program. Your committee believes this project to be a valuable addition to our postgraduate repertoire, and that funds should be made available for next season to enable programs to be produced and videotaped as necessary.

3. Continuing education is a necessity for all of us who practice medicine. It is only through such that we can improve our standards and improve the health care we provide our patients. In a recent editorial in the *Journal of the Oklahoma State Medical Association* (March, 1962) we have attempted to introduce the idea of utilizing *all* the postgraduate training facilities to solve problems in public health which may occasionally arise. Two such problems currently facing us as physicians are those of perinatal mortality and maternal mortality, and in each of these areas we can improve the record of this State by voluntary means before an agency of the government attempts to stuff something

down our collective throats. Since county medical meetings give us the broadest coverage, we have included a recommendation at the close of this report concerning their use in solving these problems. Instructional teams are available on call to help us.

4. a. The work of this committee would not be possible without the wholehearted support of the Postgraduate Office of the University of Oklahoma Medical Center which has provided us with instructional personnel and considerable secretarial help. Doctor Irwin Brown who heads that office has been most cooperative.

b. A representative of this Committee (and Council) attended a meeting of the AMA Council on Medical Education and Hospitals in Chicago in February of this year, and it should suffice to say that the work we are doing in this area in Oklahoma compares most favorably with any of the states represented there.

c. At the House of Delegates Meeting last May, this Committee was given the duty of reporting on the status of the Scholarship, Grant-in-Aid, and Loan Fund, established last year by our Association. Meanwhile, a new committee, the Financial Aid to Education Committee, has been formed to supervise the administration of this program; and Doctor Walter Brown, who heads that committee, will summarize his committee's activities at the conclusion of this report.

B. *Medical School Liaison Committee.*

1. This committee has established a program to encourage the study of medicine by outstanding high-school and college students to enable the medical profession in this State to compete favorably for the best talent available. Advisors have been appointed to function at the high-school level, and physicians of the state have been provided with a brochure which answers the specific questions which pertain to entrance to medical school. These brochures and other informative materials have been made available for distribution to interested students.

2. In order to attack this problem at another level and to promote better relations between the college pre-medical advisors, the University of Oklahoma Medical School, and this Association, a luncheon meeting was held at which mutual problems were discussed. This proved a valuable session for all concerned. The expense of this conference was borne jointly by the Medical School and the Association, and the session was so worthwhile that a recommendation has been included at the conclusion of this report that this be made an annual affair.

3. Plans are in progress to have a day set aside at the Medical School to bring pre-medical students to the campus to familiarize them with our Medical School and to encourage them to make it their number one school of choice.

C. *A.M.A.E.R.F. Committee.*

1. Though this has not been an active committee, through the efforts of the Woman's Auxiliary to our Association, and through individual contributions, somewhat over $5,000 has been contributed by the citizens of this state to the fund this year. Though this compares quite favorably with amounts contributed in previous years, it falls far short of the approximately $10,000 which this Fund presented to the Medical School here this year.

Recommendations:

1. That eight Regional Postgraduate Programs be presented next year and that $1,200 be allotted to cover expenses incurred therewith.

2. That twelve medical educational television programs be presented next year, and that $1,200 be allotted to cover expenses involved.

3. That each county medical society be urged to hold during the next two years at least one scientific session on each of the following subjects—Perinatal Mortality and Maternal Mortality.

4. That the joint meeting between the Medical School Liaison Committee an the College Pre-medical Advisors be made an annual occurrence, with the State Medical Association's share of this expense to be covered by funds allotted in recommendation No. 1 above.

This report is respectively submitted for your information and action.

Report of
FINANCIAL AID TO EDUCATION COMMITTEE

On May 7, 1961, at the annual meeting in Tulsa, the House of Delegates of the Oklahoma State Medical Association voted approval of Section 1, Recommendation 3, of the Report of the Council on Professional Education which established a Loan and Scholarship Fund to be financed by contribution of $5.00 per member per year, the $5.00 to be incorporated as an increase in dues to the Oklahoma State Medical Association from each member. The action designated the immediate Past-President of the Association to provide advice and counsel to the Medical School in the distribution of the funds.

In a letter dated June 15, 1961, directed to me from the President, Doctor Clinton Gallaher, I was advised that a standing committee on Financial Aid to Education had been set up with myself as Chairman and with Past-President Alfred T. Baker, M.D., Past-President E. C. Mohler, M.D., President-Elect J. Hoyle Carlock, M.D., and President Clinton Gallaher, M.D., serving on the Committee.

This Committee subsequently met on October 4, 1961, November 17, 1961 and February 7, 1962. As Chairman of the Committee, I made a report to the Board of Trustees meeting at Association headquarters on October 22, 1961. This report was printed in the November, 1961, issue of our Journal. A further detailed report on the status of the Fund was published in the December, 1961, Journal.

The original recommendation approved by the House of Delegates stated that $3.00 out of the $5.00 would be used as a loan fund, and $2.00 of the $5.00 would be used for

scholarships and grants-in-aid. The Committee realized that in excess of $8,000.00 a year would be coming into the Fund, and that taking 40 per cent of this for scholarships and grants-in-aid would obviously come to $3,200.00. This would leave $4,800.00 for loan purposes. Obviously the fund is going to be enriched by somewhat more than $8,000.00 per year as long as we have in excess of 1600 dues-paying members in the Association. But as a starter the Committee figured that $2,500.00 could be used for out-and-out scholarship grants in increments of $500.00 each. Accordingly, the five highest rated applicants from a scholastic achievement standpoint were selected February 7, 1962, based on detailed records submitted by Doctor Phillip Smith, the Associate Dean of Student Affairs. These five winners were Kenneth M. Allum, Jr., of Tulsa; Edward Guin, IV, Ada; Muriel E. McGlanary, Stillwater; John F. Schuhmacher, Alva; William H. Smith, II, Norman. None of these individuals was known personally to any member of the Committee and selections were based entirely on records of achievement and on reports of interviews at the time of application of the student at the medical school.

It is estimated that there will be at least ten $500.00 loan grants available during the coming year for students wishing to apply for such loans. After due deliberation, the Committee felt that the $500.00 figure was realistic for a student loan inasmuch as this would take care of his tuition at the Medical School for one year. At the present time, the scholarship awards are made only to residents of the State of Oklahoma. Loans will be made to students on the basis of need through review of applications made out on forms which the Committee has approved and left in the office of Doctor Smith at the Medical School. It will be announced to the class next fall that loan funds are available from the Oklahoma State Medical Association and that application forms may be obtained in Doctor Smith's office.

The Committee has felt that for the first year funds in excess of the $2,500.00 scholarship awards and the tentative $5,000.00 for loan funds should be set aside for grants-in-aid. These grants-in-aid would be awarded in $50.00 to $100.00 amounts for true emergencies which may arise for any student in the school. Repayment will not be sought by the Association or the school for these grants-in-aid, but will be accepted if the student later feels that he is able to repay such grants.

The question of the management of this Fund occupied the Committee at great length. It was felt from the beginning that the money should be held in a Trust Fund. Investigation proved that to have a bank trust department serve as trustee and administer the fund would cost a minimum of $150.00 a year. Further investigation revealed that the Business Administrator of the Medical Center at the University Hospital and Medical School serves as trustee for several different funds at no charge to the organizations disbursing these monies. After lenthy conversations with the Association attorney, Mr. Roy Lytle, who in turn explored the possibilities of administration thoroughly, the Committee decided, upon Mr. Lytle's recommendation, that the Business Administrator of the Medical Center and Superintendent of University Hospital be named as depository for the funds of the Oklahoma State Medical Association Loan and Scholarship Fund.

Accordingly, a legal instrument was drawn up by Mr. Lytle with detailed instructions to the Business Administrator at the Medical Center, outlining all restrictions as to disbursement of funds by direction of the Financial Aid to Education Committee of the Oklahoma State Medical Association. This agreement was duly signed by Mr. Raymond Crews and by myself as Chairman of the Committee, and the agreement is here for your inspection, or I will be glad to read the whole or any part or answer questions regarding said agreement. Actually, our accumulated funds amounted to $6,370.00 as of April 2 and are on deposit at the First National Bank of Oklahoma City under the name, Financial Aid to Education Fund of the Oklahoma State Medical Association. These funds have not yet been made available to the depository and the agreement is not to be considered official until approved by this House of Delegates here assembled.

Your discussion is invited.

Report of

COUNCIL ON SOCIO-ECONOMIC ACTIVITIES

Council Members

Mark R. Johnson, M.D., Chairman
Alfred T. Baker, M.D.
Frank J. Nelson, M.D.
Wilkie D. Hoover, M.D.
Joe L. Duer, M.D.
J. Hobson Veazey, M.D.
Charles M. O'Leary, M.D.

The Council on Socio-Economic Activities is comprised of the following Committees:

Public Welfare: Doctor Alfred T. Baker, Durant, Chairman.

Labor and Miscellaneous Third Party Programs: Doctor Joe L. Duer, Woodward, Chairman.

Industrial Health: Doctor Charles M. O'Leary, Oklahoma City, Chairman.

Prepaid Medical Care: Doctor Frank J. Nelson, Tulsa, Chairman.

Activity in the Socio-Economic Council was limited during the report period.

However, the Public Welfare Committee has negotiated consideration of an upward adjustment in examination and consultation fees paid by the Department of Public Welfare. The following is herewith submitted for your ratification:

1. Upgrade the initial evaluation fee (to determine welfare eligibility) to $10.00.

2. Adopt the following definitions and schedules of allowances for consultations, which reflect the necessary time, professional ability and costs involved, with the proviso that the Medical Review Team of the De-

partment of Public Welfare specify the type of consultation when making referral:

(a) Medical consultation requiring limited examination of a given system, but not requiring a comprehensive diagnostic history and examination, and including preparation of the needed report (about one-half hour of professional time.) *Fee: $15.00*

(b) Medical consultation requiring comprehensive diagnostic history and examination with the preparation of the needed report (about two hours of professional time). *Fee: $25.00*

(c) The above items are exclusive of any laboratory work. Laboratory work would be done as indicated, upon authorization by the Department of Public Welfare.

The committee also heard a request for its opinion of payments for certain out-patient procedures but has deferred a recommendation pending receipt of communications from physicians requesting such a program.

Pilot studies designed to survey Oklahoma and Tulsa County physicians regarding their participation in industrial health work are being carried out by the Committee on Industrial Health. These studies are not complete and no firm recommendation is submitted.

Careful study and thoughtful deliberations are called for in determining the disposition of a recommendation from the Committee on Prepaid Medical Care. The recommendation concerns the decision of the American Medical Association's Board of Trustees acting in concert with the National Association of Blue Shield Plans on January 18, 1962, that a uniform nationwide Blue Shield program of surgical and medical care benefits for all persons over age 65 should soon become available. The plan involves full service benefits to individuals and couples with certain maximum annual incomes and therefore conflicts with Oklahoma's opposition to and rejection of service contracts. Although not a unanimous opposition affirmed by each component society of the State Medical Association, the House of Delegates has, on more than a single occasion, refused to endorse the principle of service contract plans. Nevertheless, fifteen Oklahoma Counties have independently adopted the service principle in their regular Blue Shield plans. Each of the delegates to the 1962 meeting of the Oklahoma State Medical Association has received a letter from Doctor Frank J. Nelson, Chairman of the Prepaid Medical Care Committee, explaining the plan, citing the conflict, and requesting your thoughtful consideration. As with all propositions, this one, too, must meet with acceptance, rejection or compromise.

This report is respectfully submitted for your information and action.

Addendum to Report of COUNCIL ON SOCIO-ECONOMIC ACTIVITIES

Presented by: Frank J. Nelson, M.D., Chairman Prepaid Medical Care Committee

(Presented to the Board of Trustees on May 4th, received and transmitted to the House of Delegates without recommendation.)

1. Activities with regard to Blue Cross-Blue Shield Membership Councils.

Membership Councils have been established by Blue Cross-Blue Shield in all counties or areas of the state. These Councils are made up mainly of lay members, although doctor members of Blue Cross are entitled to membership and are urged to attend. These Councils hold regular meetings at which problems relating to Blue Cross and Blue Shield are considered. During the past year, through the cooperation of the Blue Shield and the doctors, about 50 of these meetings have had as their principal speakers a doctor from some area of the state away from that in which the meeting was held. These meetings have been well attended and have given opportunity for the doctors to present the case of medicine to the laity. The doctors were urged to speak on subjects of their own choosing and not necessarily in any way related to the Blue Cross or Blue Shield programs. In our opinion this has helped establish and maintain better public relations and understanding between the public and the doctors.

2. Readjustment of fees in the Blue Shield.

During the past year, Blue Shield has been working on readjustment of fee schedules. In the past there have been numerous complaints of inequities in fees paid for some services as compared to others. The new fees are based on tables derived from statistical compilations of actual fees paid for these services throughout the country. In a few instances, mainly for minor services, the fees have been adjusted downward; but in most instances they have been adjusted upward so that over-all the Blue Shield will be paying out about 20 per cent more money than it previously has been doing. This means that on the average the fees will be about 80 per cent to 85 per cent of the average actual charges now being made, depending upon what type of membership the individual buys and the particular area of the state. This does not include prenatal or post partum, out-of-hospital, care. We feel this is a very definite attempt on the part of Blue Shield to better its services, both to its membership and the doctors. This is, of course, an indemnity plan. These new contracts will be put into effect gradually over the period from July 1 to December 31, 1962.

3. Deductible policies for Blue Cross.

Blue Cross is now writing and promoting a $25.00 deductible-type of membership in which the patient pays the first $25.00 of the hospital cost. This is the only type policy which will be sold to individuals; but for groups, the type of policy will be decided by the group. That is, as to whether it will be a deductible or non-deductible policy. Blue Shield is carrying on an extensive educational campaign among its members in an

effort to make people realize their membership dues are in direct relationship to utilization.

4. Doctor membership on Blue Cross and Blue Shield Boards of Directors.

At the last annual meeting on April 18, 1962, one new doctor for Blue Shield and one for Blue Cross was elected from lists of names provided by the OSMA Liaison Committee. The doctors now serving as Directors on the Blue Cross Board are:

John E. Highland, M.D., Miami

W. D. Hoover, M.D., Tulsa

James W. Kelley, M.D., Tulsa

L. Chester McHenry, M.D., Oklahoma City

Ben H. Nicholson, M.D., Oklahoma City

R. R. Hannas, M.D., Sentinel

H. B. Stewart, M.D., Tulsa

The doctors now serving as Directors on the Blue Shield Board are:

Frank H. Austin, M.D., Lawton

Floyd T. Bartheld, M.D., McAlester

John F. Burton, M.D., Oklahoma City

Joe L. Duer, M.D., Woodward

George H. Garrison, M.D., Oklahoma City

Bruce R. Hinson, M.D., Enid

Ralph A. McGill, M.D., Tulsa

Homer A. Ruprecht, M.D., Tulsa

Orange M. Welborn, M.D., Ada

5. Information regarding the action concerning the National Blue Shield Plan for the Aged has been previously reported.

RESOLUTIONS

Resolution No. 1.

(APPROVED AS AMENDED)

Introduced By: Pottawatomie County Medical Society

Subject: Participation in Youth Fitness Program

Referred To: Legislation and Public Policy

WHEREAS, the health and physical fitness of the young people of our nation is now and will continue to be a problem of interest and concern to us both as physicians and parents; and

WHEREAS, the Oklahoma State Medical Association recognizes the need for an adequate youth physical fitness program incorporated in our education system; and

WHEREAS, the problems of formulating, instigating, and managing such a program, we feel should involve local decisions, to be adapted by parents and citizens directly concerned to suit our own local problems and facilities.

NOW THEREFORE BE IT RESOLVED, that the Oklahoma State Medical Association pledges its full cooperation in establishing and maintaining a program of youth physical fitness.

Resolution No. 2.

(APPROVED)

(Includes Resolutions 18 and 20)

Introduced By: Pottawatomie County Medical Society

Subject: Relative Value Schedules

Referred To: Insurance and Medical Service

WHEREAS, the development of a relative value scale of fee schedules has been urged upon us and our profession, primarily by "third parties," interested neither in our profession nor our privileged relationship with our patients, but instead to satisfy their own needs and in so doing undermine the right of each individual physician to deal directly with his patient for the service to be rendered and the fee to be charged; and

WHEREAS, the development of a relative value scale of fee schedules would allow persons outside our profession to use these schedules for the purposes of bargaining, fee setting, and "total coverage" programs, and would allow these persons to use this schedule to attempt to control and "hold down" medical charges, disregarding completely that many times no fees are charged for services rendered, and that in any instance in which suitable adjustments in such programs have been attempted, the physician and the medical profession are regarded as the sinner and "gouger," in spite of the known fact that physician's fees have not increased in proportion to the rising cost of living; and

WHEREAS, the development of such a program of relative value scale is one more attempt to enlist the physician in a program of compromise and surrender which, if allowed to continue, can only lead to the ultimate adoption of government control of such a schedule, and along with it the entire medical profession; and

WHEREAS, the development of such a program is impossible, since it cannot of necessity take into consideration the obvious non-standardization of the multiplicity of procedures in the practice of medicine, when performed by more than one physician, and cannot take into consideration that no two patients can be placed on a scale and standardized, and cannot stereotype any given medical case with regards to risk, pathology, care and time involved, training of the individual physician, and many other nebulous factors that are so inherent in the time-honored doctor-patient relationship.

THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association considers that the only proper and satisfactory fee arrangement in a free enterprise society is that reached by private contract between individual patient and physician, and that activities by "third parties" in the medical care field should be limited to developing contracts between themselves and potential patients.

Resolution No. 3.

(APPROVED)

(Includes Resolutions Nos. 14 and 15)

Introduced By: Tulsa County Medical Society

Subject: AMPAC and OMPAC

Referred To: Legislation and Public Policy

WHEREAS, the objectives of the American Medical Political Action Committee are commendable by assisting physicians and others to organize for more effective political action and in carrying out civic responsibilities, by encouraging physicians to understand the true nature of their government as to important political issues and as to the records of office holders and candidates for elective office, and by stimulating doctors and others to take a more active and effective part in governmental affairs, including the election of desirable candidates to office; and

WHEREAS, the objectives of the Oklahoma Medical Political Action Committee are similarly commendable in their application at the local level.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association officially recognize and endorse the American Political Action Committee and its component, the Oklahoma Medical Political Action Committee for their commendable programs of activities; and further, that the Oklahoma State Medical Association recommend to its members that they become active dues-paying members of AMPAC AND OMPAC.

Resolution No. 4.

(APPROVED AS AMENDED)

Introduced By: Tulsa County Medical Society

Subject: Free Choice of Physician

Referred To: Legislation and Public Policy

WHEREAS, there continues to be an alarming trend toward restrictions on the fundamental right of the patient to freely select his own physicians, not only in private programs of health care, but in medical care benefits now available or proposed by the various agencies of government; and

WHEREAS, such restrictions are not in the best interests of either patient or physician, contributing to the regimentation of medicine, the destroying of the vital doctor-patient relationship through third-party interference and direction, and constituting an encroachment upon the fundamental rights of the individual.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association affirm its support of the principle of free choice of physician by the patient; and

BE IT FURTHER RESOLVED, that the Oklahoma State Medical Association, through an appropriate council or committee, and with the assistance of its officers and employees, continue its public education program to acquaint industry, government and the general public with the benefits provided by the effective applications of the principle of free choice of physician.

Resolution No. 5.

(APPROVED AS AMENDED)

Introduced By: Tulsa County Medical Society

Subject: Compulsory Retirement Age

Referred To: Miscellaneous Business

WHEREAS, it is the official position of the American Medical Association and the opinion of most individual members of the medical profession that the compulsory retirement of employees at an arbitrary age—usually 65—without consideration to physical and mental condition, is medically unjustified and unfair to many individuals who are qualified to continue their employment; and

WHEREAS, the compulsory retirement deprives industry of the talents of experienced persons who are physically and mentally productive, contributes in some cases to management problems, constitutes a financial hardship on many individuals who have limited retirement benefits, and in some cases increases the burden of government to care for such persons.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association formally approves an educational campaign directed by an appropriate committee opposing compulsory retirement at an arbitrary age, and urges a policy of retirement on an individual basis with due respect to the physical and mental condition of the employee.

Resolution No. 6.

(APPROVED)

Introduced By: Tulsa County Medical Society

Subject: Two-day Meeting of the OSMA House of Delegates

Referred To: Constitution and By-Laws

WHEREAS, the volume of official business and other matters brought to the attention of the House of Delegates of the Oklahoma State Medical Association is continuing to grow year by year; and

WHEREAS, the custom of transacting all business in the course of a single day has the effect of limiting consideration of resolutions and reports, handicapping the activities of the Resolutions Committee through hasty examination, discouraging the presentation of special features which might be of interest to the House, and in some instances, depriving delegates of the privilege of attending portions of the scientific sessions concurrently in progress.

NOW, THEREFORE, BE IT RESOLVED, that in the interests of providing adequate time for consideration, examination and discussion of all matters brought to its attention, the annual meeting of the House of Delegates of the Oklahoma State Medical Association be scheduled in separate sessions on two successive days of the Association's Annual Meeting, such schedule to be determined by the Speaker of the House of Delegates and announced in advance to all delegates; and

BE IT FURTHER RESOLVED, that the Speaker of the House of Delegates may at his discretion, and after examination of the apparent volume of work to be conducted, limit the session to a single day if so indicated.

Resolution No. 7.

(APPROVED AS AMENDED)

Introduced By: Tulsa County Medical Society

Subject: OSMA Legislative Tour to Washington

Referred To: Legislation and Public Policy

WHEREAS, various state medical associations have reported the value and success of a scheduled visit of officers and influential physician-members as a group to their Congressional delegations in Washington, D.C., said tours being for the value of discussing pertinent medical and other types of legislation of interest to the medical profession and to entertain senators and representatives as a measure of friendship and appreciation.

NOW, THEREFORE, BE IT RESOLVED, that the OSMA Federal Legislative Committee be instructed to organize and develop a group tour of Oklahoma State Medical Association officers and influential members to Washington, D.C., at an appropriate time for purposes of meeting with federal legislators for business and social reasons; each individual member attending shall defray the costs of his own transportation, hotel and other expenses; that the Oklahoma State Medical Association shall finance congressional contact activities.

BE IT FURTHER RESOLVED, that each component county medical society of the Oklahoma State Medical Association be requested to arrange a similar meeting with its representatives and senators in the Oklahoma State Legislature for the purpose of discussing pertinent state legislation; said meeting to be held at least once each year at a suitable time and place.

Resolution No. 8.

(APPROVED)

Introduced By: Tulsa County Medical Association

Subject: Funds for Medical Examiner Law

Referred To: Legislation and Public Policy

WHEREAS, the Oklahoma State Medical Association has for a number of years actively worked for a Medical Examiner System for the State of Oklahoma, and succeeded in having such a law enacted by the Oklahoma State Legislature in 1961: and

WHEREAS, this legislation failed to include an appropriation of funds to pay for operation of the program, and to make said program succeed, funds are vital and necessary.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association formally endorse and approve the Medical Examiners law and direct that the State Legislative Committee cause to be introduced into the Oklahoma State Legislature a proposed law providing the necessary finances for implementation of the Medical Examiners law, and that every effort be made to secure passage and approval of such proposed appropriations.

Substitute Resolution No. 9.

(APPROVED)

Introduced By: Oklahoma County Medical Society

Subject: Seat Belts-Auto Safety Campaign

Referred To: Miscellaneous Business

WHEREAS, injury and death from automobile accidents are among the nation's most serious health problems; and

WHEREAS, the value of seat belts in reducing injury from automobile accidents is well established; and

WHEREAS, safety officials, public health agencies, the American Medical Association and many state and county medical societies have formally encouraged more widespread use of such safety devices.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association recommend universal use of automobile safety belts, and

BE IT FURTHER RESOLVED, that individual physicians encourage their patients to install and use automobile safety belts.

Resolution No. 10.

(APPROVED)

Introduced By: Oklahoma County Medical Society

Subject: Licensure Renewal Fee

Referred To: Legislation and Public Policy

WHEREAS, the Oklahoma State Board of Medical Examiners operates an office for the maintenance of records and other business pertaining to the licensing of doctors in the State of Oklahoma and is financed solely by fees authorized under the Medical Practice Act which are paid by the doctors, ten per cent of which must be by law paid into the State General Revenue Fund; and

WHEREAS, the State Board of Medical Examiners has performed a function of service to the doctors as well as the general public in that every reasonable service and courtesy and source of information which may properly be performed under the law has been foremost in the minds of those who attempt to serve this purpose; and

WHEREAS, the cost of maintaining an office, including postage, printing costs, rent and other expenses have increased over 26 per cent in the last ten years while the income has increased only about 20 per cent in the same period, making it impossible to operate under the present fees; and

WHEREAS, the expenditures have exceeded the income for the past six years; and

WHEREAS, the State Board of Medical Examiners is being compelled to move to one of the new State Capitol Office Buildings at an increase of 25 per cent in rent cost.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma County

Medical Society recommends to the Oklahoma State Medical Association that 59 O.S. 1961 § 495 be amended in the 1963 session of the Legislature as follows:

"ANNUAL RENEWAL CERTIFICATE OF REGISTRATION: FEE

"59 O.S. 1961, § 495a—AMENDMENT

"Each person holding a license or certificate issued by the Board of Medical Examiners of the State of Oklahoma authorizing him to practice medicine and surgery in Oklahoma, who desires to continue to so practice after the expiration of the fiscal year ending June 30, 1941, shall, on or before June 10, 1941, and annually on or before June 10 of each year thereafter, apply to the Secretary-Treasurer of said Board, on forms furnished thereby, for the Renewal Certificate of Registration entitling him to practice medicine and surgery in Oklahoma during the next ensuing fiscal year. *Each such application shall be accompanied by a renewal fee in an amount fixed by the State Board of Medical Examiners, provided said fee for annual renewal shall not exceed Ten Dollars ($10.00) per year.* Upon receipt of such an application and fee it shall be the duty of the Secretary-Treasurer, on or before June 25 of the year the application and fee are so received, to issue to the applicant a Renewal Certificate of Registration for the next ensuing fiscal year, which certificate will entitle the person to whom it is issued to practice medicine and surgery in Oklahoma during said fiscal year. Provided, that no such Certificate of Registration shall be required of a person for the fiscal year in which he received, either on examination or by reciprocity, his original license or certificate to practice medicine and surgery in Oklahoma."

Resolution No. 11.

(APPROVED)

Introduced By: Oklahoma County Medical Society

Subject: Permissive Legislation—Narcotics Information

Referred To: Legislation and Public Policy

WHEREAS, the Uniform Narcotic Drug Act specifies that a licensing board be notified only of a conviction of a violation; and

WHEREAS, the State Board of Medical Examiners has been able to secure reports of violations and has taken disciplinary action which in many instances has resulted in the rehabilitation of the doctor without undue publicity; and

WHEREAS, the Narcotic Enforcement Division of the Office of the Attorney General has cooperated with the State Board of Medical Examiners in preventing minor violations from becoming major problems.

THEREFORE BE IT RESOLVED, that the Oklahoma County Medical Society recommends to the Oklahoma State Medical Association that 63 O.S. 1961 § 415 be amended in the 1963 session of the Legislature as follows:

"We do recommend that enactment of legislation authorizing the Narcotic Enforcement Division of the Attorney General's Office to furnish state licensing boards any information in its files concerning any person licensed under the laws of this state to practice any profession, to the Board which issues licenses for such profession."

Substitute Resolution No. 12.

(APPROVED)

Introduced By: Oklahoma County Medical Society

Subject: Concerning Government Employment Services

Referred To: Insurance and Medical Service

WHEREAS, the original sole purpose and function of this governmental agency was to assist unemployed persons to find employment who applied to them; and

WHEREAS, in the past several months in Oklahoma, these government services have hired personnel to call upon medical employers to ask that both the physicians and their employees rely upon the Government Employment Services for all their employment needs; and

WHEREAS, this same service has contracted with some, and attempted to do so with other professional paramedical associations in other states throughout the nation to handle placement of all personnel in the medical field; and

WHEREAS, public money has been used to obtain advertising in news media throughout the state, searching for professional skilled medical personnel, asking them to contact their offices to obtain desired positions in the medical field. These advertisements are NOT searching for people on the unemployment rolls, but primarily for people holding jobs over the state who might be interested in changing positions for salary increases only. These are people sorely needed in their present positions—nurses, laboratory technicians, medical secretaries, etc. who have no unemployment problems; and

WHEREAS, these actions by the Government Employment Services in no way increase the number or availability of these professionally trained people, nor do they in any way reduce unemployment cost. They do, however, give implication to persons professionally trained or otherwise, that employment in the medical field can and should come primarily through registration with these government offices. Such an approach can only lead to displacement of, and subsequent increase in the cost of paramedical personnel, and add unnecessary additional advertising costs to the large budget of the said Government Employment Services; and

WHEREAS, the Oklahoma State Medical Association believes that the functions which the said government agency is apparently trying to assume with regard to hospital and medical office personnel can best be handled by the professional associations themselves, and private enterprise currently established in this field, schooled and experienced in medical employment.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association go on record as opposing this action as one unnecessary, unjust and in direct competition with private enterprise which has been serving this function adequately at no expense to the taxpayer for decades. Members of the healing arts be alerted to this encroachment by the Government Employment Services in Oklahoma, lest it destroy and usurp the fabric of medical services at all levels, by interferring with the established patterns of employment of personnel by practitioners and institutions. That this resolution be widely disseminated to all persons potentially affected by it, so that they can protect the interest of their loyal employees and resist the advances of government control into this field, by refusing to use this agency as a source of personnel. That the professions reinforce such agencies as the Registry for Nurses, Medical Assistant's Society, Registry of Laboratory and X-ray Technicians, etc. as are recognized by the society as being ethical, and that known reputable private employment agencies be commended for their services to our professions in this area.

Resolution No. 13.

(Ruled similar in intent to Resolution No. 16; with official action taken on No. 16.)

Resolution No. 14.

(Ruled similar in intent to Resolution No. 3; with official action taken on No. 3.)

Resolution No. 15.

(Ruled similar in intent to Resolution No. 3; with official action taken on No. 3.)

Resolution No. 16.

(APPROVED AS AMENDED)

This Resolution covers Resolutions No. 13 and 23.

Introduced By: Washington-Nowata County Medical Society

Subject: Blue Shield Indemnity Contract

Referred To: Insurance and Medical Service

WHEREAS, the new National Blue Shield Plan for the aged as proposed by the American Medical Association is a service plan insurance program; and

WHEREAS, service plan insurance injects a third party for the purpose of limiting, lowering and stereotyping medical professional fees; and

WHEREAS, the doctor's fees are the economic responsibilities of the physician and his patient.

THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association does not approve the new National Blue Shield Service Contract and encourages its members not to participate in the program; and

BE IT FURTHER RESOLVED, that we recommend instead, an indemnity type contract be worked out.

Resolution No. 17.

(APPROVED AS AMENDED)

Introduced By: Washington-Nowata County Medical Society

Subject: The Bauer Statement

Referred To: Legislation and Public Policy

WHEREAS, the House of Delegates of the American Medical Association in June, 1961, enthusiastically endorsed the statement of principle introduced by Doctor Louis H. Bauer; the statement being as follows:

"The House of Delegates of the American Medical Association records its opposition to any legislation of the King-Anderson type. Its opposition is based on the facts that such legislation does not meet the needs of the situation; interferes with the doctor-patient relationship; interferes with the rights of doctors employed in hospitals; is inordinately expensive; leads inevitably to further encroachments by government into medical care; results eventually in a deterioration of the type of medical care rendered the public; and is therefore detrimental to the public interest.

"The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay; and it further believes that the profession will render that care according to the system it believes is in the public interest; and that it will not be a willing party to implementing any system which we believe to be detrimental to the public welfare."; and

WHEREAS, the Federal Administration continues to push for a type of medical care for the elderly regarded by most physicians as inimical to the best interests of both patient and physician; and

WHEREAS, the Administration has instituted traveling Department of Health, Education and Welfare Conferences (at taxpayers expense) to try to sell this fallacious idea to the public.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association approves the Bauer statement and encourages its members in each county of the State of Oklahoma to help formulate and effectuate definite plans to inform the public correctly and to oppose all legislation of the King-Anderson type.

BE IT FURTHER RESOLVED, that the doctors of the OSMA will pledge themselves to continue to care for all patients regardless of ability to pay.

Resolution No. 18.

(Ruled similar in intent to Resolution No. 2; with official action taken on No. 2.)

Resolution No. 19.

(ACTION DEFERRED)

Introduced By: Creek County Medical Society

Subject: Constitutional Amendment

Referred To: Constitution and By-Laws

WHEREAS, it becomes evident that each year some proposal is made to establish a fee schedule for the medcal, surgical and special services of the members of the Oklahoma State Medical Association; and

WHEREAS, the CONSTITUTION AND BY-LAWS of the Oklahoma State Medical Association provides no provisions for the establishment of such a fee schedule for its members.

NOW, THEREFORE, BE IT RESOLVED, that no official action shall be taken by the Oklahoma State Medical Association establishing any schedule of fees for the medical, surgical and special services of its members; and

BE IT FURTHER RESOLVED, that the Oklahoma State Medical Association shall not enter into a contract with any person, firm, or agency, with respect to the practice of medicine or fees for such practice; and

BE IT FURTHER RESOLVED, that this resolution be written into the Constitution of the Oklahoma State Medical Association.

Resolution No. 20.

(Ruled similar in intent to Resolution No. 2 with official action taken on No. 2.)

Substitute Resolution No. 21.

(APPROVED)

Introduced By: Tulsa County Medical Society

Subject: Immunization Education Program

Referred To: Miscellaneous Business

WHEREAS, current statistics of the Oklahoma State Department of Public Health indicate that a large percentage of the population of Oklahoma has not been adequately immunized against Tetanus, Diphtheria, Whooping Cough, Small Pox, and Poliomyelitis; and

WHEREAS, this situation may lead to widespread epidemics, reduce the level of public health and individual health, lead to death and permanent physical deficiencies in many cases, and render the population unprotected against the perils of biological warfare.

NOW, THEREFORE, BE IT RESOLVED, that the Oklahoma State Medical Association in cooperation with interested health agencies promote an effective public educational campaign considering the need for adequate immunization, this program to be of a continuing nature; and

BE IT FURTHER RESOLVED, that this program be developed in keeping with the principles of the free choice of physician, and

BE IT FURTHER RESOLVED, that physicians be encouraged to provide immunization for those individuals for whom payment would be a hardship.

Resolution No. 22.

(NO ACTION)

Introduced By: Grady County Medical Society

Subject: Department of Public Welfare Fee Schedule

Referred To: Insurance and Medical Service

WHEREAS, the fee schedule of the Department of Public Welfare with the physicians of this state has not been revised since its inception, and there are certain inadequacies.

NOW, THEREFORE, BE IT RESOLVED, that the Grady County Medical Society requests that the House of Delegates of the Oklahoma State Medical Association approve a study and committee from the House of Delegates to meet with the Department of Public Welfare for revising this fee schedule.

Resolution No. 23.

(Ruled similar in intent to Resolution No. 16; with official action taken on No. 16.)

Resolution No. 24

(APPROVED)

Introduced By: State Board of Medical Examiners

Referred To: Miscellaneous Business Committee

"50 O.S. 1961, Section 506—Amendment

"DECISION OF BOARD: REVOCATION OR SUSPENSION OF LICENSE

"If it be the decision of the Board, after considering all the testimony presented, that the defendant is guilty as charged, it shall be the duty of said Board, and the Board shall have the power to revoke and cancel the license of certificate of such defendant and his rights thereunder to practice medicine and surgery, as defined by this Act, shall forever cease. The Board, however, may suspend such license or certificate for a definite period of time not to exceed five (5) years, during which suspension the holder of such suspended license or certificate shall not be entitled to practice medicine and surgery thereunder, but upon expiration of such term of suspension, he shall be reinstated by the Board, and shall be entitled to resume his practice, unless it shall be shown to the satisfaction of the board that such party has, during the term of such suspension, continued to practice medicine and surgery in the State of Oklahoma, or has been guilty of any act of unprofessional conduct, as herein defined, in which event the Board shall revoke and cancel the certificate or license of such holder and his rights thereunder shall forever cease. Provided, that the Board shall have power to place the holder of such license or certificate upon probation for any period of time not less than one (1) year * * * *during which time his conduct will be kept under observation; at the expiration of such period of probation the charges of unprofessional conduct shall be dismissed; provided, that the accused shall have been guilty of no additional offense; or the Board may take such other action as at its discretion it may deem proper.*"

Resolution No. 25.

(APPROVED)

Introduced By: State Board of Medical Examiners

Referred To: Miscellaneous Business Committee

"59 O.S. 1961, Section 731.4—AMENDMENT

"PUNISHMENT FOR VIOLATIONS:

"Any person who shall violate the provisions of this Act shall on the first offense be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than Fifty ($50.00) Dollars, nor more than Five Hundred ($500.00) Dollars, or by imprisonment; in the county jail for not less than five (5) days, nor more than thirty (30) days, or by both such fine and imprisonment; *for the second offense shall be guilty of a felony and upon conviction thereof shall be punished by a fine of not less than One Thousand ($1,000.00) Dollars or one year in the state penitentiary or both such fine and imprisonment.* Each day upon which this Act shall be violated shall constitute a separate offense and be punishable as such."

AMENDMENTS TO THE CONSTITUTION AND BYLAWS

(All Amendments Approved Except No. 12)

1. Amend the Constitution and Bylaws in all sections where the words "Council" and/or "Councilor(s)" appear by replacing such designations with the words "Board of Trustees" and "Trustee(s)", respectively.

2. Amend Chapter I, Section 3.01 of the Bylaws, by inserting the following words at the beginning of the third sentence, and making them a part of that sentence:

"An authenticated copy of . . ."

3. Amend Chapter III, Section 8.00 of the Bylaws, by creating a new paragraph 8.09 and by re-numbering succeeding paragraphs in consecutive order, to-wit:

"8.09 REPORTS OF THE COUNCILS."

4. Amend Chapter III, Section 9.00 of the Bylaws, by changing the order of paragraphs 9.01 through 9.05 as follows: 9.03, 9.04, 9.01, 9.02, and 9.05; and by re-numbering the paragraphs in consecutive order.

5. Amend Chapter VI, Section 1.00 of the Bylaws, by inserting the words "Councils and" between the words "all" and "committees" in the second sentence of the paragraph.

6. Amend the Bylaws by inserting a new Chapter VIII and by redesignating all succeeding chapters of the By-Laws, as follows:

"Chapter VIII"

"Councils"

"Section 1.00 COUNCILS. The Councils of the Association shall be: Council on Public Policy, Council on Insurance, Council on Professional Education, Council on Socio-Economic Activities and Council on Public Health.

"1.01 PURPOSE. The Councils shall assist the President in planning, supervising and controlling appropriate aspects of the Association program. At the discretion of the President, Association committees will be grouped under the direction of appropriate Councils.

"1.02 APPOINTMENT. Each Council shall consist of at least six members of the Association, and the membership of each Council may include the chairmen of the committees under its direction. Physicians will be appointed to the Councils by the President, to serve concurrently with his term of office."

7. Amend Chapter IX, Section 1.00 of the Bylaws, by inserting the words "Medical School Liaison Committee" between the words "Grievance," and "Executive."

8. Amend Chapter IX, Section 8.00 of the Bylaws, by adding the following new paragraphs:

"8.01 DUTIES. The Executive Committee shall serve in an advisory capacity to the President.

"8.02 MEETINGS. The Executive Committee shall meet on call of the President."

9. Amend Chapter IX of the Bylaws by creating a new Section 9:00 and by redesignating the present Section 9.00 as Section 10.00, to-wit:

"Section 9.00 MEDICAL SCHOOL LIAISON COMMITTEE.

"9.01 DUTIES. The Medical School Liaison Committee shall establish necessary liaison with the University of Oklahoma School of Medicine and with the Board of Regents of the University of Oklahoma.

"9.012 The Medical School Liaison Committee shall develop and sustain a program designed to interest well-qualified and motivated students in medicine as a career."

10. Amend Chapter IV, Section 11.00 of the Bylaws, by replacing the word "Annual" with the word "biennial."

11. Amend Chapter VII, Section 1.00 of the Bylaws, by replacing the word "Annually" with the word "biennially" and by changing "April 1st" to "July 1st."

12. No official action shall be taken by the Oklahoma State Medical Association establishing any schedule of fees for the medical, surgical, and special services of its members. The Oklahoma State Medical Association shall not enter into a contract with any person, firm, or agency, with respect to the practice of medicine or fees for such practice. (No action taken; referred to Constitution and Bylaws Committee.)

13. Amend Chapter V, Section 5.00 of the Bylaws to read: "Nominations shall be made in either the opening or closing sessions of the Annual Meeting of the Oklahoma State Medical Association."

National will convene next week—as of this writing—and the name of an alternate delegate was submitted too late for inclusion with our list of delegates: Mrs. J. Hoyle Carlock of Ardmore.

During the summer we hope to orient new members and re-acquaint other members with our auxiliary projects. In becoming acquainted with auxiliary work, as with that of any organization, knowing the ABC's of structure courts highest. For every active member and every member-at-large, the "A" of our organization stands for A.M.E.F. As we explained fully several months ago, we are now to refer to this project as A.M.A.-E.R.F. Two national foundations were consolidated, necessitating a change of name: American Medical Association Education Research Foundation.

Many corporations are supporting medical education and research by matching employee donations with equal funds. Some foundations are recognizing this significant need. As never before, the number of medical students must be increased to meet our ultimate population demands; and the quality of teaching and facilities must keep pace.

Many methods are used by auxiliaries to meet the quota asked of us. (Last year the amount was $5.00 per member; we will let you know as soon as possible what it will be for the coming year.) Playing cards are available to sell for profit; bridge parties are held; "stay-at-home" ideas are cleverly presented; memorial donations and contributions to honor the living are encouraged; tickets are sold as chances on hand-made articles. Whatever the project, please gladly offer your support for this worthwhile cause.

When you wish to make contributions, send them to your local chairman, president, or to our State Chairman, Mrs. Virgil Ray Forester, 2336 Belleview, Oklahoma City. Checks should be made payable to A.M.A.-E.R.F., and please stipulate that the amount be sent to our own University of Oklahoma School of Medicine.

The "B" in our orientation stands for the *Bulletin*, which is mentioned almost every month on this page. It is published by national four times annually: September, November, March, and May. Subscription is $1.00.

Mrs. Charles A. Smith, 320 East Keith, Norman, sends this message to every member and member-at-large: "Our goal for Oklahoma this year is 100 per cent membership subscription. Cleveland-McClain Auxiliary is the first to reach 100 per cent. Will your auxiliary be the next to achieve this goal of 100 per cent?"

Why is this magazine of such great importance? Mrs. Smith asks that we consider the following quote from the National *Bulletin* Chairman, Mrs. James D. Morrison:

> "As wives of physicians, we share a common interest in the world. From Alaska to Florida, from Hawaii to Maine, we have the same questions on legislation, civil defense, A.M.A.-E.R.F., health careers, mental health, community service, rural health, and safety. Do you honestly think the members in your state can answer the Who, What, When, Where, and Why to these subjects? Are they aware of the work being done to maintain the status of medicine in America today? Of the need for capable, helping hands in our respective communities? Do they accept responsibilities and tasks in any organization without having correct information and proper tools?"

Convinced? You should be. In addition, we constantly champion the *Bulletin* for its good style and readability. Not too many national organization publications qualify in this respect. Send your subscription right away to your chairman or county president —and we shall have a banner year, a well-informed membership. □

OSMA JOURNAL / *the last word*

The latest county medical society to join in the mass polio immunization plan is Pottawatomie County, where physicians will sponsor distribution of oral vaccine beginning in September.

There are 8,497 foreign physicians in training in the U.S. this year, according to a study of the Institute of International Education. In contrast to the total importation of foreign students, which reached a record high of 72,113 in 1961-62, the number of physicians dropped from a 1960-61 level of 9,935, marking the first decline in thirteen years.

Oklahoma County Medical Society will start its fall programming with a "meet the candidates" program on September 25. Invitees: Henry Bellmon, W. P. Atkinson, A. S. Monroney and Hayden Crawford.

More Oklahoma doctors are becoming interested in AMA politics. In addition to the "official" OSMA delegation, the following were among those seen in the AMA headquarters hotel, site of the House of Delegates meeting: John R. Adair, M.D., Ardmore, Nolen Armstrong, M.D., Oklahoma City, Andre B. Carney, M.D., Tulsa, Francis Davis, M.D., Shawnee, Paul Gallaher, M.D., Shawnee, Charles E. Green, M.D., Lawton, Worth M. Gross, M.D., Tulsa, Warren G. Gwartney, M.D., Pryor, Dalton B. McGinnis, M.D., Oklahoma City, E. K. Norfleet, M.D., Bristow, Cecil R. Stansberry, Jr., M.D., Oklahoma City, and Harlan Thomas, M.D., Tulsa.

AMA announces new disability insurance plan. Designed to supplement the more immediate benefits of state association-sponsored plans, the AMA-Continental Casualty program pays up to $1000 per month lifetime benefits for sickness or accident disabilities, commencing one year after disability occurs. Expected to become available after August 1st, the program carries no age limit and will be available at reduced coverages for impaired risks.

The Board of Trustees of Oklahoma Blue Cross-Blue Shield will host a star-studded program for their fall meeting, October 19-21, Western Hills Lodge. Speakers include top national executives of the AMA, AHA and the Blue Cross-Blue Shield Plans. OSMA officers and related committee personnel are invited.

How do the aged finance health care? Three Blue Cross plans (Cleveland, Ohio; Oklahoma and Texas) conducted a study and proved what King-Anderson Bill opponents have long suspected. A census of hospitalized patients in the three areas revealed that virtually all over-65 patients surveyed in 584 hospitals had made arrangements to pay for their hospital care through voluntary means or existing governmental programs. Oklahoma (44 hospitals) accounted for the financial responsibility of everyone hospitalized on the test day: 19.3 per cent had Blue Cross; 22 per cent had commercial health insurance; 38.8 per cent were under the Kerr-Mills program; and, 19.9 per cent were self-pay. Where's the proven demand for King-Anderson?

Since February 13, 1962, 9,826 physicians have given $178,000 to the American Medical Association's Loan Guarantee Program for medical students, interns and residents. The 245,762 physicians who did not respond have another opportunity through the direct mail solicitation now underway by the AMA.

Oklahoma enjoys the dubious distinction of placing third in 1961 national competition for federal welfare dollars. The leaders: California — $145.3 million; Texas — $103.1 million; and Oklahoma—$57.8 million.

MEETINGS

July 28	Southwestern Clinical Symposium, McAlester
September 9	Annual Meeting—Red River Valley Section, Oklahoma AAGP — Lake Texhoma Lodge
September 15	Oklahoma Chapter American College of Surgeons, Sequoyah State Park
October 29-31	Oklahoma City Clinical Society

NEWS LETTER

OKLAHOMA STATE DEPARTMENT OF HEALTH
OKLAHOMA CITY, OKLAHOMA

THE SIGNIFICANCE OF PERINATAL COMPLICATIONS

In the past several decades there has been an impressive reduction in the death rate of mothers and their offspring. However, the resulting survival of more infants with developmental handicaps presents new problems for parents and physicians, as well as for the community. It is therefore essential that we direct attention to the cause and prevention of these handicaps.

Pasamanick and others have demonstrated the association between perinatal complications (maternal, fetal, and infant diseases and disorders) and developmental disorders in the child. These developmental handicaps range from mild to severe mental and motor retardation, and include deviations in behavior at later ages. In a recent report from the Pennsylvania Hospital, the incidence of either maternal or infant complications, or both, was 63.9% for 595 ward cases and 40.0% for 780 private cases. There is less information available concerning the frequency of developmental handicaps; however, it is evident that the same conditions that lead to death of the mother and/or her infant may also lead to severe developmental handicaps in the surviving child.

The Oklahoma State Department of Health and the University of Oklahoma Medical School are jointly undertaking a study of perinatal complications and their relationship to death and disability of infants in Oklahoma. Although it is hopeful that this and similar studies will supply valuable information and guide-posts to physicians, hospitals, and other medical facilities, the reduction in the incidence of perinatal complications and handicaps can best be accomplished by a local medical team approach. The team approach should include: appraisal of the existing local problem; full interchange of ideas and experiences by local physicians and community health agencies; and institution of local educational programs in the area of maternal and newborn disorders and care.

In March, 1962, the Perinatal Mortality Committee of the Oklahoma State Medical Association was reactivated. A major goal of this Committee is the institution of local educational programs concerning obstetrics and neonatal pediatrics. Requests for support in the planning and execution of these local perinatal educational programs may be directed to the Chairman of the Perinatal Mortality Committee. Awareness of perinatal complications--their diagnosis, treatment and significance--will provide a solid foundation for significant reduction in the incidence of developmental handicaps in future generations.

(A SUPPLEMENT TO THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION)

The JOURNAL of the Oklahoma State Medical Association

AUGUST 1962
Vol. 55/No. 8

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D.
(Heart Page)
MRS. JOSEPH J. MARIL
(Auxiliary)
J. W. MURPHREE, M D.
RICHARD W. PAYNE, M D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

A Standing Ovation For Doctor Ben Nicholson . . . 319
The Faculty House 320
A Proposal For Socialized Groceries 320
President's Page 323

scientific

Traumatic Arteriovenous Fistula of Thirty-seven Years Duration, *Victor L. Robards, Jr., M.D.* 324
Persistent Patent Ductus Arteriosus in An Adult—A Case Report, *John L. Hackney, M.D.* 327
Tuberous Sclerosis: Report of A Case With Brief Review of the Literature, *E. A. Franken, Jr., M.D.* 330
Heart Page, Gilbert S. Campbell, M.D. 334

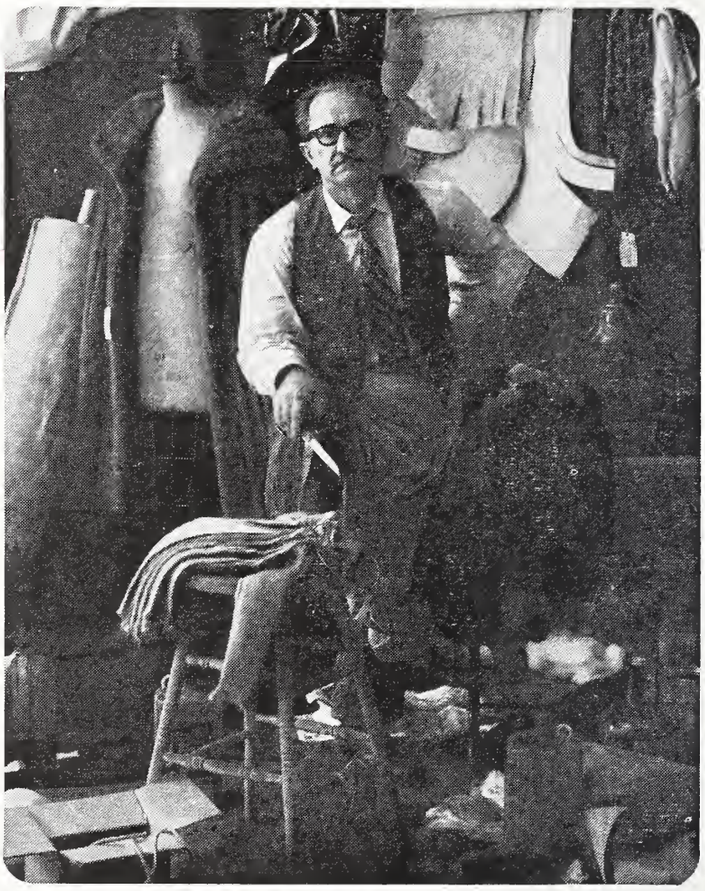
medical center

Dean's Message 335
Medical Grand Rounds, *Edited by William E. Hughes, M.D.* 336
Faculty News 344

news

Kerr Kills Medicare in Senate 346
Letter 348
We Resolve 348
Assistant Executive Secretary Hired 349
Pamphlets Available from OSMA Office 350
OSHA Will Sponsor Continuing Education 350
Hill-Burton Report 351
Death 351
Miscellaneous Advertisements 352
Index to Advertisers xl
Auxiliary xli
The Last Word xlii

when occupational allergies strike



CONTINUOUS 10-12 HOUR ACTION

Dimetane® Extentabs®

brompheniramine maleate 12 mg.

reliably relieve the symptoms . . . seldom affect alertness

Also available in conventional tablets, 4 mg.; Elixir, 2 mg./5 cc.; Injectable, 10 mg./cc. or 100 mg./cc.

A. H. ROBINS CO., INC., RICHMOND 20, VA.

MAKING TODAY'S MEDICINES WITH INTEGRITY
. . . SEEKING TOMORROW'S WITH PERSISTENCE

PHARMACEUTICALS · RESEARCH

A Standing Ovation For Doctor Ben Nicholson

The Oklahoma State Medical Association owes a great debt of gratitude to Doctor Ben Nicholson for his long, faithful, inspired and energetic service as Editor-in-Chief of *The Journal.*

For eight years, through ninety-six separate issues, Doctor Nicholson has sifted scientic material, supervised *The Journal's* organization, studied the problems of Oklahoma medicine and written for the editorial pages from his vast experience and understanding.

These many issues of *The Journal* under his direction will remain as a monument to his wisdom and unselfish devotion to medicine in Oklahoma.

Doctor Nicholson is an eminent pediatrician and one wonders where he found enough hours in the day to maintain a busy practice, to serve as Clinical Professor of Pediatrics at the medical school and at the same time to produce a journal of such quality that it was judged best of all United States' medical journals in 1961.

His inestimable service to *The Journal* could not have been bought nor commanded. It was given freely out of his abundant kindness and generosity to his fellow physicians.

Doctor Nicholson is a rare example of the successful physician. He has achieved wisdom, excellence in his profession, peace of mind and greatest of all he has given more to his fellows than they can ever give him in return.

We offer our most sincere thanks in appreciation of his magnificent work for Oklahoma medicine and *The Journal.*

editorial

The Faculty House

601 N.E. 14th
Oklahoma City, Oklahoma

The Faculty House was organized more than four years ago to serve as a base of operations for visiting professional men, particularly physicians, so they could relax in comfortable surroundings, conduct business, spend the night or as a place for private gatherings among Oklahoma doctors, their families and friends.

Four years of experience have confirmed the value of the Faculty House in its role as a center for visiting firemen and scientists in general. Now it has a substantial membership and its monthly operations are on the profit side of the ledger.

Some problems remain.

For example, the Foundation which purchased the Faculty House originally has never been paid any rent so the membership was encumbered with a potential debt of about $156,000. Likewise, in the beginning, "classes" of membership were devised which were confusing.

In order to correct these problems the Faculty House Board of Directors recently arranged to make the House available to all members without charge from the Foundation thereby bringing the total indebtedness down to $16,000. Steps are being taken to eliminate the last few remaining creditors after which the group will begin redecorating the House and landscaping the grounds.

In addition, the Board has eliminated "classes" of membership in the Faculty House. Membership is now uniform for all residents of Oklahoma City and the dues have been lowered from their previous $15 to $12 per month. For those who do not live in Oklahoma City dues are a standard $15 annually.

The Board also has changed the basis for membership in the Faculty House to permit the entry of non-medical people who are interested in other arts and sciences. To join the Faculty House these non-medical folks must be recommended by present members. This change will add stature to the organization and enhance the attractiveness for its growing membership.

Members of the Faculty House, especially its Board of Directors, are to be congratulated on their remarkable progressive accomplishments.

Physicians outside Oklahoma City would be well advised to join the Faculty House as non-resident members since it serves as a fine stop-over place while they are in Oklahoma City at rates more reasonable than those in most hotels. In addition, there are facilities for catering, private gatherings and professional meetings that are unique and medically beyond the offerings of other "private clubs."

A Proposal For Socialized Groceries

ROSS SCHLICH, M.D.

Norman came to my door without foreword late in the evening. His eyes glowed with the light of ancient prophets. He was in a lather of excitement. He had driven in from Topeka (where he practices) in one sitting, allowing only for two coffee stops. Norman had been a classmate of mine in medical school and even then was given to magnificent flights of enthusiasm. Some people thought he was unduly nervous, but I think it is fairer to consider him as possessed of an unusual degree of what one might call cerebral tonus.

After renewing his strength with a bacon and tomato sandwich Norman said, "My friend, what I have to tell you is bigger than both of us!"

"I'm listening," I said, not even trying to guess what it might be this time.

"I'm heading for Washington to lobby for socialized groceries," he said with such deliberate measure to the announcement that I could not mistake the seriousness of his intent.

"I'm astounded," I said. "I didn't think you were for socialized anything. I always thought you were too much of an individualist for that. What is this, a joke?"

"Quite the contrary. I'm in dead earnest. I have been selected to represent the John Burp Society in Washington."

"You mean John Birch!" I said, wondering how Norm could fit into the Birch group, or any group, for that matter.

"I mean John Burp Society. The name was chosen for its symbolism. It suggests improper diet and it is against the indigestible fact that a significant segment of our population in this country is suffering an unfair hardship because of the high cost of groceries!"

"What group is that?" I asked, becoming interested.

"Our children, of course," Norm said. "It's quite obvious. From infancy till the age of 18, growth is fastest, metabolism is highest. More food is required than during any other phase of life. Many of our children are not getting it because of the high cost of groceries. The John Burp Society means to correct this injustice during this critical period of the individual's life by financing groceries through Social Security."

"But children aren't on Social Security."

"Enough of their parents are to justify a bureau that will make the Secretary of Agriculture smile in his sleep and the Secretary of H. E. W. green with envy."

"I don't get it," I objected. "There are plenty of agencies that provide for food for the needy now. I haven't seen any children starving on the streets in this country."

"I haven't seen any old people dying in the gutters from want of medical attention either," Norm said, "but medical care for the aged through Social Security is going great guns."

"You're right," I had to admit.

"Socialized groceries is more logical than socialized medicine. Surely you can see that. Parents during the child bearing years can least afford the high cost of groceries. They have not yet reached their greatest income producing years. Children of the aged are relatively well established and can better afford to pay for medical care for their old parents than young, struggling parents can stand the high cost of groceries to feed their ravenous offspring."

"You have a point," I said, beginning to succumb to the inexorable logic that always characterized Norm's thoughts.

"Wait! Wait!" he said. "There are several important points held by the John Burp Society that I haven't even touched on. First, people eat all the time but they are not sick all the time. First things first—why not attack the more important problem first? Second, there is a surplus of food in this country and a shortage of doctors. Why lose the natural advantage of this fact? Third, if groceries were socialized, the saving to the consumer would be so great that in old age he could afford to pay for his medical care and still take a trip around the world! In short, socializing medicine would never solve the grocery problem, but socializing groceries would immediately solve the medical problem. Now I ask you, is there any question in your mind about what we should do?"

"I just don't know what to say," I said.

"Think it over. I have and so I'm on my way to Washington to establish the priority of socialized groceries over socialized medicine. After all, if the Burp plan wouldn't work, the worst that could happen would be an increase in colic and a little more gut ache here and there. If socialized medicine wouldn't work, the health of the nation could be seriously jeopardized."

"What exactly is the John Burp Society?"

"Well," Norm said, "it started when I was visiting my great Uncle John Dalton in Ogden. Uncle John is the village sage; he used to be a harness maker but for the last 40 years he just whittles and rocks and thinks. His motto is first-things-first. On my visit I started talking about medical care for the aged through Social Security to see how he felt about it since he is such a sharp old man. When I finished, quick witted as ever, he said that the first thing that needed socializing was groceries. 'If a man don't have proper groceries,' he said, 'he don't have the strength to get sick.' Those were his very words. That was the birth of the idea. We developed interest in the concept, refined it, got a following, and rented a hall. Great Uncle John spoke at the first meeting. So we named the society John to honor him and Burp because of the indigestible fact that the children of this noble land of ours are suffering an unfair hardship. The grocers aren't doing anything about it. So the government has to. At least that's the way the John Burps see it."

"Have you run into any opposition yet?"

"We expected the American Grocers Association to be up in arms. But we were sur-

prised to be denounced by the Bartenders Union, the Druggists Association, the Beauticians, the United Hardware Dealers, and the National Association of Manufacturers. This stems from the fact that in a big supermarket you can buy bobby pins, pipe wrenches, tooth paste, furniture polish, pajamas, a new set of tires and a case of booze. When groceries become socialized it will take a whole bureau of the top legal minds just to define exactly what groceries are."

"It sounds like a losing proposition."

"No, my boy," Norm said fervently, "not when you're right. And not when the other side is using the most transparent kind of cliches instead of facts. Let the rich merchants who traffic in profit on food at the cost of underfed children cry 'Free Choice of Grocer' to their heart's content! No one will listen—not when they can get a free handout."

"Will there be Free Choice of Grocer in the Burp system?"

"Of course there will be—if all the grocers sign up and take the customers assigned to them. The grocers who balk will be dead ducks and the customers that won't cooperate deserve to starve. If it is of little importance who your doctor is, then it is of no importance who your grocer is."

"But if the government subsidizes groceries till age 18, won't it be just a matter of time before the whole population will be fed on the taxpayer's money?"

"Of course. This is just the first step. By then I expect to be head of the Bureau. The possibilities are fascinating. There will be a Division of Calories, a Division of Burp Stamps, a Division of Collection, a Division of Distribution, just to name a few, and ten or twenty subdivisions under each of these, all under the Bureau of Groceries."

"I'm not so sure the situation is as bad as you paint it," I said. "It seems to me that children in this country look pretty big and healthy."

"You would be nearer correct if you said that the aged of this country get excellent medical care. The John Burp Society has made a preliminary nutritional study and has found that the unfortunate children of this great land of ours exist largely on a diet of hamburgers and cokes. Why? Simply because their parents cannot afford the high rate of their metabolism, the high speed of their growth, and the high cost of adequate groceries to support this unique phase of their lives. Socializing groceries is the only answer. The John Burp Society will see to it that the voters realize the necessity of proper legislation to this effect."

"As a doctor who has become interested in socializing groceries," I said, "how do you feel about socialized medicine now?"

"If socialized groceries works," Norm said, "then I'll be in favor of socialized medicine."

"Not till then?"

"No, not till then."

"Well," I said, "I think if socialized groceries works I'll be in favor of socialized medicine, too."

"I'm sure every doctor will be," Norm said.

"I think so, too," I said. "But I wonder if they socialize medicine first, will all the grocers be in favor of socialized groceries next?"

"I'm not so sure," Norm said.

"Neither am I," I said.

Reprinted, by permission, from the Bulletin of the Sangamon County Medical Society, Springfield, Illinois.

CLINICAL SOCIETY SLATED

October 29, 30 and 31, 1962 are the dates selected for the 32nd Annual Fall Conference of the Oklahoma City Clinical Society to be held at the Sheraton-Oklahoma Hotel.

Specialty lectures by 15 guest speakers will cover diversified fields of medicine. In addition, Mr. J. Roger Deas, representative of the American Can Company, New York City, will be featured speaker at the annual banquet on Monday evening, October 29.

Advance registration fee, which is $20.00, may be mailed to Mrs. Alma O'Donnell, Executive Secretary, Oklahoma City Clinical Society, 503 Medical Arts Building, Oklahoma City.

This issue of our Journal is truly The Robert S. Kerr Special, or The Statesman's Edition.

Never could a tribute be more timely nor more justly deserved.

During the past 40 years, our country has produced only a few really great men. Without question the world will class our esteemed Senior Senator from Oklahoma, Robert Samuel Kerr in this distinguished category.

We are a proud and privileged people to be represented in our nation by this dynamo of integrity, dedicated to the progress of Oklahoma and the maintenance of our democracy as conceived by God and our founding fathers.

From his log cabin birth in Oklahoma Territory 65 years ago, this Christian gentleman has achieved an amazing succession of successes until his accomplishments are legendary.

The ends he has attained are suffused with tireless energy, spontaneous and sometimes caustic wit, a nerve predicated on a confident background of ability, as well as financial security and an ever growing power of position.

The medical, and its allied professions, are increasingly aware of his wisdom and foresight, in helping to maintain our nation's health in the hands of our people, in contrast to those distant, impersonal, expensive hands of a Washington Welfare Department.

We want him to know that those most interested in the best health care for our people, both in Oklahoma and in our Nation, say sincerely, we thank you, we are strong for you, and may your fine democratic precepts live long.

J. Hoyle Parlock, M.D.

OSMA JOURNAL/scientific

Traumatic Arteriovenous Fistula of Thirty-seven Years Duration

VICTOR L. ROBARDS, JR. M.D.

AN ACQUIRED arteriovenous fistula is a condition in which there is an abnormal communication between a large artery and companion vein as a result of trauma to these structures.[1] They are usually due to penetrating wounds and rarely to external trauma. Of all the peripheral vessels the femoral vessels are the most common site of arteriovenous fistulas.[2]

Anatomically, an arteriovenous fistula produced by a stab wound or a missile is often a compound lesion, consisting of the fistula between the two vessels and a pulsating hematoma on the opposite surface of the artery. This compounding of the lesion is due to the fact that the damage to the artery, whether it be missile or stab, enters and leaves the artery, producing two openings. The opposed holes produce the fistula; the wound in the free surface of the artery forms the false aneurysm.[3]

In brief, the eventual hemodynamic alterations of the cardiovascular system are as follows: (1) hypertrophy of the heart, (2) increase in cardiac output, (3) increase in stroke volume, (4) increase in pulse rate, (5) widening of the pulse pressure, (6) lowering of mean arterial pressure, and (7) increase in the blood volume[4] with eventual heart failure if the fistula is of sufficient size.

CASE REPORT

L.F., a 47-year-old white female was admitted to the University Hospital because of a thrill and bruit in the right thigh which were discovered during a routine pelvic examination in the gynecologic clinic, where she was being seen for menopausal symptoms. History revealed that this patient was shot in the right thigh with a 22 calibre rifle at age 12. The bullet entered the lateral aspect of the leg, lodged in the leg and was supposedly removed from the medial aspect of the thigh by a physician. After approximately six weeks the patient was able to bear weight on the leg. Shortly thereafter she developed large dilated veins in the right leg inferior to the injury. About two months following the injury she began to notice a "buzzing" in the medial aspect of the right lower thigh. The patient became more aware of this in the five years prior to admission. The patient also gives a 30 year history of dyspnea on walking two blocks

and orthopenea requiring two pillows for sleeping. She had palpitation associated with exertion during the five years prior to admission.

On physical examination, the temperature was 98.6° F., pulse, 120; respirations, 18; blood pressure, 150/90 mmhg. The patient was a well developed thin white female who was quite tense and appeared about ten years older than her stated age. The skin showed good warmth with adequate turgor. Her eyes, ears, nose and throat were within normal limits except for gross decrease in vision and hearing bilaterally. The neck veins were not distended. The chest was of normal configuration and the lungs were clear. The cardiac examination revealed a forceful apical impulse in the fifth intercostal space just outside the mid-clavicular line. The rhythm was normal but a soft holosystolic murmur was heard at the apex. All peripheral pulses were palpable with slight decrease in the dorsalis pedis and posterior tibial pulses on the right. A swishing noise synchronous with the heart beat could be heard within the abdomen. The liver and spleen were not palpable. There was a two by two cm. circular scar over the lateral aspect of the right thigh eight cm. above the knee and a similar three by three cm. scar on the medial aspect of the thigh. There was a thrill palpable and a to and fro bruit audible along the medial aspect of the thigh from the groin to the knee, the greatest intensity being over the old scar. There were marked varicosities of the right lower leg.

Hemogram, PBI, urinalysis, VDRL, BUN and blood sugar were within normal limits. Venous pressure was less than 30 mm. saline and arm to tongue circulation time was 12 seconds. X-ray examination of the chest showed moderate generalized cardiomegaly, and was suggestive of early congestive failure. An electrocardiogram revealed left ventricular hypertrophy. A right femoral arteriogram showed a communication between the superficial femoral artery and vein, aneurysmal dilitation at the level of this communication and very early filling of the veins of the thigh. There was a metallic density in the right lower thigh. Blood volume was 6115 cc.

The patient was operated upon. Gross findings at surgery included dilated superficial femoral artery and vein with several tortous veins surrounding the superficial femoral artery. There was a fistulous connection between the superficial femoral artery and vein about ten to 12 cm. above the distal head of the femur. Directly opposite this fistulous channel, on the antero-lateral aspect of the superficial femoral artery, was another fistulous channel extending into the substance of the vastus medialis muscle. This most likely represented a false aneurysm. This false aneurysm was closed. The arteriovenous fistula was resected with a portion of the superficial femoral artery. The defect left in the vein was closed longitudinally and the artery repaired by end to end anastamosis.

Histologic sections of the resected fistula and portion of the artery revealed moderate variation of thickening of the arterial wall and some endothelial proliferation. The patient's post operative course was uneventful and she was discharged on the 12th post operative day.

The patient was seen approximately nine months following the surgical repair of her arteriovenous fistula. She stated that she had had no shortness of breath, orthopnea, or palpitations since her surgery and that the varicosities of her right lower leg were much less prominent. On physical examination the blood pressure was 132/86 mmHg. and pulse 88. Cardiac examination revealed a palpable apical impulse in the fourth intercostal space at the midclavicular line. There was a well healed surgical scar on the medial aspect of the right thigh. The dorsalis pedis and posterior tibical pulses were equal and strong in both lower extremeties. The superficial veins of the right lower leg were not nearly so prominent as previously noted. Repeat chest x-rays at this time were with-

---

A 1961 graduate of the University of Oklahoma School of Medicine, Victor L. Robards, Jr., M.D., took his internship at Saint John's Hospital in Tulsa. He is now taking a residency in urology at the University of Missouri Medical Center, Columbia, Missouri.

Work on this paper was done while Doctor Robards was a senior medical student.

in normal limits. Electrocardiogram showed left ventricular hypertrophy but less than before surgery. Circulation time was 18 seconds.

DISCUSSION

Surgical correction of arteriovenous fistula must be considered whenever the diagnosis of arteriovenous fistula is made.[2] Spontaneous closure of an arteriovenous fistula is not a common occurrence; however, a few cases have been reported. Jahnke[5] reports an incidence of approximately two per cent in his series.

For many years the accepted surgical management for arteriovenous fistula was quadruple ligation and excision of the fistula. When this type of repair was used, it was usually suggested that one wait three months before repair of the fistula, to allow time for the development of collateral circulation.[6] A disadvantage of this method of treatment is the high incidence of vascular insufficiency. Foley et al[7] reported an incidence of clinical arterial insufficiency of 50 per cent in patients with arteriovenous fistula treated by quadruple ligation and excision while Seeley[6] reported an incidence of 24.1 per cent. With the development of better techniques in arterial surgery, and following vast experiences in the management of acute arterial injuries during the Korean War (Jahnke et al[8]) there is little doubt that immediate re-establishment of arterial continuity is the preferred method of treating arteriovenous aneurysm when this method is feasible.

The fistula of long duration will frequently pose another difficult problem, namely, degenerative changes in the arterial wall producing arteriosclerosis and calcification in long segments of the artery proximal to the fistula. These changes being particularly apt to occur if the fistula is localized in the lower extremity.[9] deTakats[10] states that in arteriovenous fistula of many years standing quadruple ligation and excision of the fistula may still be the procedure of choice.

The purpose of this presentation is to suggest that in certain cases of arteriovenous fistula of long duration, the fistula can be repaired by excision, closure of the vein and re-anastomosis of the artery with good results. □

REFERENCES

1. Abramson, D. I.: Diagnosis and Treatment of Peripheral Vascular Disorders. New York, Paul B. Hoeber, Inc., 1956, p. 294.
2. Keeley, J. T., Schaires, A. E.. and Pesek, I. G.: Peripheral Arterial Aneurysm and Arteriovenous Fistuls. Surg. Cl. N. America 40(1): 97-110, February, 1960.
3. Allen, J. G., Harkins, H. N., Moyer, C. A. and Rhoades, J. E.: Surgery; Principles and Practice. Philadelphia, J. B. Lippencott Co., 1957. p. 1046.
4. Thomas, G. I.: Arteriovenous Fistula: Review of Hemodynamic Alterations and Treatment. Q. Rev. Surg. 16(1): 9-23, Jan.-Mar., 1959.
5. Hughes, C. W. and Jahnke, E. J.,, Jr.: Surgery of Traumatic Arteriovenous Fistulas and Aneurysms. Ann. Surg. 148: 790-787, 1958.
6. Seeley, S. F., Hughes, C. W., Cook. F. W. and Elkin, D. C.: Traumatic Arteriovenous Fistulas and Aneurysms in War Wounded. Am. J. Surg. 83: 471-479, 1952.
7. Foley, P. J., Allen, E. V., and Janes, J. M.: Surgical Treatment of Acquired Arteriovenous Fistulas. Am. J. Surg. 91: 611-617, 1956.
8. Jahnke, E. J. and Howard, J. M.: Primary Repair of Major Arterial Injuries. A.M.A. Arch. Surg., 66: 646, 1953.
9. Holman, E.: Fundamental Principles governing the Care of Traumatic Arteriovenous Aneurysms. Angiology, 5: 143-176, 1954.
10. deTakats, G.: Vascular Surgery. Philadelphia, W. B. Saunders Co., 1959, p. 141.

Department of Urology
University of Missouri Medical Center
Columbia, Missouri

DELEGATES SURVEYED

Speaker of the OSMA's House of Delegates, Marshall O. Hart, M.D., is now circulating a questionnaire to all delegates and alternate delegates in an effort to improve the planning and conduct of business meetings of the policy-making body.

Although response to the survey has been excellent, a 100 per cent return of the questionnaire is desired. Physicians who have not reported are urged to do so immediately.

Persistent Patent Ductus Arteriosus in An Adult—A Case Report

JOHN L. HACKNEY, M.D.

THE FIRST typical case of patency of the ductus arteriosus in an adult was reported in 1845.[2] This patient, an adult woman, displayed typical findings of patent ductus arteriosus for many years, before her death from subacute bacterial endocarditis. Post mortem observations confirmed the diagnosis. Since that time, clinical observers have become more and more aware of the problem of patency of the ductus arteriosus in the adult.

CASE REPORT

This 39-year-old para 6, gravida 7, abortus 1 white female was first seen in the outpatient department at University Hospital on January 9, 1961, with a chief complaint of a "heart murmur" for the past 21 years. This murmur had been noted during her first pregnancy and had persisted, apparently unchanged, during subsequent physical examinations and gestations. The patient was asymptomatic, with regard to the cardiovascular system, until six years ago, when she began to experience intermittent episodes of tachycardia, palpitations and shortness of breath associated with exertion. During the past year she experienced sharp "crushing" precordial pain, increased dyspnea with smothering sensations, and brief syncopal episodes with the spells of tachycardia. This chest pain was not characteristic of angina pectoris in duration or relationship to exercise, and was not relieved by rest or vasodilators (nitroglycerin and Peritrate[2]). A history of cyanosis of the fingertips with these episodes was obtained from the patient. For six months prior to this visit the patient had noted progressively increasing dyspnea on exertion with decrease in exercise tolerance. When first seen she could walk less than two blocks on a level plane before becoming exceedingly dyspneic.

There was a history of childhood "smothering spells" obtained from the patient's mother, but the patient apparenty led an active athletic life as a child. There was no history suggestive of rheumatic fever. Pedal edema, chronic cough, hemoptysis, and cyanosis of the lower extremities were denied by the patient.

Past history was remarkable only in that the patient had carried six pregnancies to term without serious difficulty. The most recent pregnancies, in 1957 and 1959, were complicated by an increase in the frequency of the episodes of tachycardia and palpitations, but this had responded well to bed rest.

The systems review revealed a 14 pound weight loss during the past one and one-half years.

There was no family history of congenital or acquired heart disease.

Physical examination revealed a sthenic white female in no distress. Cyanosis was

not present, either at rest or with exercise. The pulse rate was 72 per minute and regular. Blood pressure was 106/60 millimeters of Hg. The patient was afebrile. Examination of the head, eyes, ears, nose and throat revealed no abnormality. The lungs were clear to auscultation and percussion. The cardiac PMI was diffuse in the fifth intercostal space, 11 centimeters to the left of the midsternal line (4 centimeters outside the left midclavicular line). There was no evidence of increased venous pressure. A coarse systolic thrill was palpable over the upper sternum. Tracheal tug was not present. On auscultation a loud, harsh, machinery-like murmur with an accentuated systolic component was heard over the pulmonic valve area with radiation across the left precordium into the left axilla. This murmur was not affected by exercise nor by changes in position. The second heart sound was faint over the pulmonic area and was very loud over the aortic valve area. The examination of the abdomen was noncontributory. Pelvic examination was within normal limits. Strong femoral and popliteal pulses were palpable bilaternally. Neurologic examination was within normal limits.

The hemogram revealed a hemoglobin of 14.2 grams per cent with a total white blood cell count of 6,300/ cubic millimeter. PA and left lateral chest x-rays revealed a moderate degree of cardiomegaly. An electrocardiogram was interpreted as showing left ventricular hypertrophy. A right heart catheterization, performed on January 18, 1961, revealed a right ventricular blood oxygen saturation of 79 per cent, with a pulmonary artery blood oxygen saturation of 94 per cent. Right ventricular pressure was 37/5 millimeters of Hg, while pulmonary artery pressure was 34/15 millimeters of Hg (mean 21). Pulmonary artery wedge pressure was normal. Brachial artery blood oxygen saturation was 98.7 per cent.

These data were felt to be compatible with a left to right shunt of three to one magnitude with an intact interventricular septum and competent pulmonary valve. An aortogram was made by injecting 40 cc's of 75 per cent Hypaque[R] through a catheter introduced through the right brachial artery, revealing a prominent aorta with a large communication with the pulmonary artery through which the contrast material was shunted from left to right. No evidence of aorticopulmonary window was noted.

On March 11, 1961, a left thoracotomy was performed and a thin walled patent ductus arteriosus measuring 1.4 centimeters in diameter found. The heart and great vessels were otherwise unremarkable. The ductus was clamped with a Potts ductus clamp, divided, and closed with two layers of continuous-00000- silk sutures.

The patient had an uneventful postoperative course and was discharged after 12 days. She was last seen in the outpatient department on April 11, 1961, 40 days post-operative. At this time she reported complete remission of symptoms. No murmur could be heard at this time and no thrill was palpable. A chest film revealed a normal cardiac silhouette and an electrocardiogram showed only slight left ventricular hypertropy.

DISCUSSION

With the first successful ligation of a patent ductus by Gross and Hubbard[4] in 1939, an effective means of treatment and cure for this condition became available. Subsequent experience with the complications of untreated patent ductus arteriosis in adults has lead to the recommendation of surgical closure of the ductus in these patients soon after diagnosis.

The diagnosis of patency of the ductus arteriosis in adults is generally easy, especially if the lesion is an isolated one. Symptoms are nonspecific. Dyspnea on exertion and easy fatigability are the most common reported symptoms. Palpitations and cardiac irregularities are noted by a large per cent

---

John L. Hackney, M.D., graduated from the University of Oklahoma School of Medicine in 1961. Since taking his internship at Mound Park Hospital in St. Petersburg, Florida, he has established his practice in Wakita, Oklahoma.

This manuscript was submitted while Doctor Hackney was a senior medical student.

of patients in reported series. Left submammary pain, chronic bronchitis, hemoptysis and typical angina pectoris have been reported. Fairley[2] stresses that in his experience, most patients are asymptomatic until middle age or later. In his series, 30 per cent of the patients were completely asymptomatic. The single most important clinical finding in establishing the diagnosis is the continuous "to and fro," or machinery-like, murmur of patent ductus arteriosus. This is variously reported as being present in from 95 per cent to 100 per cent of patients in rather large series.[2] Thus auscultation remains the basis of diagnosis in most of these cases.

Once the diagnosis is thus established, or at least suspected, it is customary to document and support the diagnosis by x-ray and electrocardiographic findings. The most characteristic radiologic finding is some degree of cardiomegally, often with quite apparent enlargement of the pulmonary artery. Left ventricular hypertrophy is the only consistent electrocardiographic finding, and is not in itself diagnostic. Cardiac catheterization is frequently used to confirm the diagnosis with a greater degree of certainty. In the presence of increased pulmonary artery pressure with reversal of the shunt through the ductus arteriosus, the symptomatology and clinical findings are similar to those described above, except that cyanosis of some degree is usually detectable.

SUMMARY

(1) A case of uncomplicated patent ductus arteriosus in a 39-year-old multiparous female was presented. The diagnosis or diagnostic procedures used in establishing the diagnosis, the surgical closure of the ductus, and the subsequent post operative condition of the patient were described.

(2) The commonly observed symptoms and clinical findings of patency of the ductus arteriosus in the adult were briefly discussed.

BIBLIOGRAPHY

1. Davis, F. W. Jr.: Patent Ductus Arteriosus, American Heart Journal 59: 479-80. March 1960.
2. Fairley, G. H.: Patent Ductus Arteriosus in Adult Life. British Journal of Diseases of the Chest 53: 263-77. July 1953.
3. Fishman, L.: Patent Ductus Arteriosus in a Patient Surviving to 74 Years. American Journal of Cardiology 6: 685-88. Sept. 1960.
4. Keys, A. and Shapior, M. J.: Patency of the Ductus Arteriosus in Adults. American Heart Journal 25: 158-86. January 1943.
5. Touroff, A. S. W.: The results of Surgical Treatment of Patency of the Ductus Arteriosus. American Heart Journal 25: 187-209. Jan. 1943.

General Delivery, Wakita, Oklahoma

SOCIAL SECURITY FACTS

U. S. News and World Report (July 2) carried an article entitled, "The United Story of Your Social Security." It points out graphically the following facts: The funded debt is $624 billion; the amount on hand in the trust fund is $22 billion; taxes coming in are $282 billion. . . . This leaves a gap of $320 billion which will have to be paid by future generations.

Health care for the aged tied to social security would compound this problem, the magazine said.

Copies of the article may be obtained by writing the AMA Communications Division, 535 North Dearborn Street, Chicago 10, Illinois.

TUBEROUS SCLEROSIS: *Report of A Case With Brief Review of the Literature*

E. A. FRANKEN, JR., M.D.

TUBEROUS SCLEROSIS, a disease process first described in 1880, has been infrequently reported since then. Although relatively rare, the clinician should be aware of this entity in that it is a recognized cause of seizures and mental deficiency. In order to familiarize the reader with this disease, the following case is reported.

E. N. (#182-441), a colored male, was first seen in University Hospital out-patient department in 1954, at age 13, with a history of frequent major motor seizures for one year. At the initial visit, a general physical and neurological examination was said to be within normal limits, and no mention was made of skin lesions. There was no familial history of similar illnesses. The patient was said to be doing "poorly" in school, but in the same grade as his age group. At that time skull films were reported as negative, and I.Q. was determined to be 84, with slow reaction time and occasional blocking, but in low normal range. An electroencephalogram was said to be consistent with an idiopathic seizure disorder, showing generalized cerebral dysrhythymia with random spiking, disorganized four to six/sec. waves with outbursts of moderate potential, and fast activity from 30 to 40/sec. extending through all fields. The patient was started on anticonvulsants, with gradual increase of these drugs, until he was on dilantin, 200 mg. daily; mesantoin, 150 mg. daily; and mebaral, 100 mg. daily. This resulted in reduction of the frequency of his seizures to one every three to four months.

The patient was continued on this regimen until June, 1960, when one examiner noted facial lesions which the patient stated had been present "for many years," and referred him to dermatology clinic. The dermatology consult described multiple brown-black papules, one to three mm in diameter, occurring over the malar area, alae nasi, and central portion of the chin. These papules were diagnosed as adenoma sebaceum. Some pedunculated lesions were also noted to be present. On the patient's back were two six by ten cm. collagenous plaques. Repeat skull films showed multiple islands of increased density scattered throughout the calvarium. In retrospect the skull films made six years earlier were said to show areas of suggestive increased density. Films of the spine were normal, but the hands showed abnormal tubulation of the metacarpals, with the distal portions club shaped. An intravenous pyelogram revealed no abnormalities. Excisional biopsies of the pedunculated lesions showed some increase in pigmentation in both dermis and epidermis, suggesting compound nevi. Biopsy of the plaques on the back showed some proliferation of collagen with no other

specific changes. At Tumor Conference on August 18, 1960, the patient's case was reviewed, and the diagnosis of tuberous sclerosis was made.

Since 1960 the patient's course has remained essentially unchanged, with infrequent seizures. He quit school before graduation because of poor grades and has found employment as a dishwasher.

The tuberous sclerosis complex was first brought into medical recognition with Bourneville's description in 1880, but an earlier report is now known to exist with Von Recklinghausen in 1863.[1] In 1890 Pringle first described the skin manifestations of this disease,[1] and in 1908 Voght reviewed the cases reported to that time and noted the usual clinical triad of adenoma sebaceum, mental deficiency, and seizures.[2] Since that time investigators have reported many more abnormalities which have been found in this entity, so now it is recognized that the disease can affect almost any organ of the body.[3] Tuberous sclerosis has been the designated name for this complex since Voght's report,[2] but other commonly used names include epiloia and Bourneville's disease.[4]

Tuberous sclerosis is a rare disease, with the incidence in the United States reported as .002 per cent of the general population, and .01 per cent of admissions to epileptic institutions.[5] In Europe there is apparently a greater incidence, with this condition being found in .6 per cent of admissions to epileptic institutions.[5] But some authors feel that because of many undiagnosed cases and formes frustes, the true number of cases is somewhat greater than the above figures.[6, 7]

The etiology of tuberous sclerosis is obscure, but many theories have been advanced. A familial occurrence was first described by Kufs in 1913,[1] and has been noted in many cases since then.[8] No definite genetic pattern has been demonstrated as yet.[8] One prominent theory of the etiology is that of Moolten,[9] who considers the disease a "disseminated hamartomatosis," i.e., a condition in which there is improper "embryonal organization" with resultant faulty development and appearance of hamartomas in various organs. Other theories include that of abnormal release of proliferative tendency in tissues, and multiple neoplasia.[4] Some authorities in the past have suggested that the disease is related to Von Recklinghausen's neurofibromatosis, because of occasional similarities in nerve tumors and cafe au lait spots, but this is not generally accepted now.[4]

The pathological changes in tuberous sclerosis are found throughout the body in various organs, but structures of ectodermal origin, i.e., skin and nervous tissue, are particularly prone to be involved.[5]

In the central nervous system[4] are found multiple hard nodules, varying in size and number. Location is most commonly in the cerebral cortex and ependymal lining, but they are not infrequently found in the cerebral subcortex, cerebellum, and brain stem. These nodules may be distinct and separate from a gyrus or not grossly distinguishable from a gyrus, and occasional nodules are visible only microscopically. The lesions cut with a cartilaginous consistency and are of a pearly white color, whence comes the designation as "tuberous."

Microscopically[4] the most marked changes are in the nodules, but grossly normal brain tissue usually shows some of the characteristic findings. There is a severe disturbance in cellular architecture of the cortex, with loss of the boundary between white and gray matter, and distortion in lamellation of the cortex. A decreased number of nerve cells, an increased number of glial cells, and atypical giant neurons and neuroglia are present. There are occasional areas of extensive glial fibrosis, as well as nests of giant neurons, some with double nuclei and bizarre shapes.

The subependymal nodules are somewhat different, in that they show side by side proliferation and degeneration, with frequent calcification, and areas of extensive fibrosis.[4]

Spongioblastomas are frequently found in this disease and almost invariably occur in the strio-thalamic area.[4, 10] Because of their location obliteration of the third ventricle is common, with resultant hydrocephalus.[10]

While a senior student at the University of Oklahoma School of Medicine, E. A. Franken, Jr., M.D., submitted this manuscript. After his graduation in 1961, he interned at Saint John's Hospital in Tulsa, Oklahoma.

Tumors of the retina are found in about 25 per cent of patients with tuberous sclerosis,[5] and are referred to as phakomata.[3] These are visible on ophthalmoscopic examination as distinct retinal tumors, and are histologically similar to those seen in the brain.[3]

"The skin is a literal playground of the disease, which disports itself in many different ways."[11] The most constant dermatological lesion seen in this disease is that of adenoma sebaceum,[2] although even this change is missing in 50 per cent of cases.[12] These lesions usually appear between ages four and ten, beginning at the nasolabial folds, and extending in a butterfly distribution over the face.[2] Grossly these are discrete papules, about four mm. in diameter, and may occasionally become pedunculated.[2] Microscopically the most common finding is actually hyperplasia of hair follicles, rather than an excess of sebaceous glands.[2] Occasionally plague like lesions are found in the same area, which are miscroscopically identical to the papules.[2]

Another characteristic skin finding in tuberous sclerosis is the presence of palm sized thickened areas of skin over the lumbosacral area, referred to as "shagreen patches."[11] Many other less diagnostic lesions are sometimes present, including subungual fibromas, nevi of various sorts, pigment disturbances (especially cafe au lait spots), nail changes, and hyperkeratotic areas.[2]

Numerous bone changes are reported in conjunction with tuberous sclerosis,[13, 14, 15] but these are usually of diagnostic significance rather than of a nature detrimental to the patient. Findings include islands of sclerotic bone in the cranial vault,[13] irregular deposition of subperiosteal bone,[14] and cystic areas in bones of the hands and feet.[14]

The other organs in the body affected in tuberous sclerosis show hamartomas of some sort, or less commonly benign and malignant tumors.[5] The more common lesions include renal, splenic, hepatic, thyroid, adrenal, and bony hamartomas.[5] Recently it has become evident that the lungs can be affected with miliary small cysts, which are again hamartomas microscopically.[6] Tumors which can be found include rhabdomyomas of the heart (originally described by Von Recklinghausen),[1] renal hypernephromas,[10] and multiple polyposis coli.[16] Structurally abnormal development of hands, ears, and kidneys has also been infrequently reported.[3]

The clinical picture of tuberous sclerosis can show extreme variation from patient to patient.[10] The classic picture of tuberous sclerosis is the patient who has Voght's triad, i.e., mental deficiency, seizures, and adenoma sebaceum.[1] But many patients show a different clinical picture, such as central nervous system disease only (with seizure and mental deficiency),[1] skin changes alone,[12] extra-neural tumefactions of various sorts,[1] or internal hydrocephalus from a single tumor of the third ventricle.[1, 10] Cases have been reported in relatives of an affected patient who showed only one manifestation, such as hypernephroma.[10] Also it is now becoming apparent that mental deficiency is not invariably found when the central nervous system changes are found, and some authorities feel that normal mentality in tuberous sclerosis is rather common.[7] In view of the extremely varied clinical state which can be seen, many authors feel that about 50 per cent of affected patients show a forme fruste of this entity.[6, 7, 10]

Diagnosis of tuberous sclerosis is dependent upon several factors. The history will usually be that of major motor seizures with mental deficiency, and familial history similar illnesses in relatives. Physical examination should note any skin changes characteristic of the disease, as well as retinal phakomata.

X-ray examination is a rewarding procedure in the diagnosis of this condition. In addition to radiological evidence of tumefactions in various organs (kidney, lung, and rarely heart),[15] bone changes are found in about 60 per cent of patients,[13, 14] and 50 per cent will show intracranial calcification.[13] Skull films will often demonstrate patchy islands of increased density in the calvarium, and generalized thickening of both tables of the cranial vault.[14] Films of the hands and feet may reveal irregular deposition of subperiosteal bone, cystic areas in bone, and cortical pitting of phalanges.[14]

Long bones are sometimes a confirmatory source, with evidence of cystic areas, irregular cortical thickening, thickened trabecular pattern, and small periosteal nodules.[14] The pelvis and spine have been infrequently reported to show patchy areas of increased bone density.[14] Pneumoencephalography can be utilized to visualize the subependymal nodules of the brain, which have an appearance referred to as candle gutterings.[1, 7] In fact, one authority suggests pneumoencephalography as a diagnostic procedure in any patient suspected of tuberous sclerosis.[1]

The electroencephalogram is abnormal in 91 per cent of cases of tuberous sclerosis, as well as in 33 per cent of relatives of affected patients.[17] The incidence of EEG abnormalities here is somewhat higher than in that of other institutionalized epileptics.[17] However there are no diagnostic abnormalities, and localization of the tuberous nodules cannot be done by this method.[17]

The prognosis in patients with tuberous sclerosis is variable, according to the severity of expression of the disease process. In patients with the classical triad of symptoms, prognosis is poor, with most patients dying by the third decade of life.[12] Similarly, those with obstructive hydrocephalus secondary to gliomas of the strio-thalamic area have a poor prognosis.[10] But patients with less severe involvement may live a normal life span, without being incapacitated.[10]

The treatment of tuberous sclerosis is that of suppression of convulsive episodes, local dermatological measures for the skin lesions, neurosurgical intervention for obstructive symptoms, and surgical extirpation of any malignant tumors that arise. The seizures usually respond to anticonvulsants, but high dosage is required, and aplastic anemia has been reported five times secondary to therapy for this condition.[5] An important part of treatment is long term follow-up to detect any tumors when they appear.

The patient reported in this paper is an almost classical case of tuberous sclerosis, with the exception that his mental ability is probably in the neighborhood of borderline intelligence. Because his skin lesions were not reported when he was initially seen, one wonders if they were present and overlooked, or had not yet developed. In either case this represents a remonstrance to "look at the whole patient" when considering problems of a single system of the body. It also demonstrates the point that, although tuberous sclerosis is an infrequent cause of otherwise idiopathic seizures, an awareness of the existence of this disease should be kept in mind.

SUMMARY

1. A case of tuberous sclerosis with seizures, adenoma sebaceum, and borderline intelligence is reported.
2. The pathological features in this disease consist of hamartomas in many organs of the body, especially the central nervous system and the skin.
3. Diagnosis is dependent upon demonstration of these lesions in skin, central nervous system, and other organs affected.
4. Tuberous sclerosis should be considered as a diagnostic possibility when evaluating idiopathic seizures.

BIBLIOGRAPHY

1. Hudolin, V. L., and Petrovic, F.: A Contribution to the Diagnosis of Tuberous Sclerosis. Journal of Neurology, Neurosurgery, and Psychiatry 20: 125-130, 1957.
2. Butterworth, I., and Wilson, M.: Dermatologic Aspects of Tuberous Sclerosis. AMA Archives of Dermatology and Syphilology 43: 1-41, 1941.
3. Pagenstecker, W. J.: Tuberous Sclerosis—Historical Review and Report of Two Cases. American Journal of Ophthalmology 39: 663-675, 1955.
4. Globus, J. H.: Cytology and Cellular Pathology of the Nervous System. Edited by W. Penfield. Volume 3, pp. 1150-1156. New York: Paul B. Hoeber Inc., 1932.
5. Smith, K. D., Sapp, O. L., and Metzger, J. F.: Tuberous Sclerosis: Report of Two Cases and Brief Review of the Literature. United States Armed Forces Medical Journal 6: 417-426, 1955.
6. Dawson, J.: Pulmonary Tuberous Sclerosis and its Relationship to Other Forms of the Disease. Quarterly Journal of Medicine, Oxford 23: 113-145, 1954.
7. Duvoisin, R. C., and Vinson, W. M.: Tuberous Sclerosis: Report of Three Cases Without Mental Defect. Journal of the American Medical Association 175: 869-873, 1961.
8. Jordan, W. M.: Familial Tuberous Sclerosis. British Medical Journal 2: 132-135, 1956.
9. Moolten, S. E.: Hamartial Nature of the Tuberous Sclerosis Complex and Its Bearing on the Tumor Problem. AMA Archives of Internal Medicine 69: 589-623, 1942.
10. Kessel, F. K.: Some Radiological and Neurosurgical Aspects of Tuberous Sclerosis. Acta Psychiatrica et Neurologica 24: 499-522, 1949.
11. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: Dermatology. Philadelphia: W. B. Saunders Co., 1956.
12. Cares, R. M.: The Tuberous Sclerosis Complex. Journal of Neuropathology and Experimental Neurology 17: 247-254, 1958.
13. Holt, J. F., and Dickerson, W. W.: The Osseous Lesions of Tuberous Sclerosis. Radiology 58: 1-8, 1952.
14. Hawkins, T. D.: Radiological Bone Changes in Tuberous Sclerosis. British Journal of Radiology 32: 157-161, 1959.
15. Whitaker, P. H.: Radiological Manifestations in Tuberous Sclerosis. British Journal of Radiology 32: 152-156, 1959.
16. Budenz, G. C.: Tuberous Sclerosis, a Neurocutaneous Syndrome; Report of a Case. Radiology 55: 522-526, 1950.
17. Dickerson, W. W., and Hellman, C. D.: Electroencephalographic Study of Patients with Tuberous Sclerosis. Neurology 2: 248-254, 1952.

St. John's Hospital, Tulsa, Oklahoma

Peripheral Arterial Embolism

GILBERT S. CAMPBELL, M.D.*

Fifty-one years have passed since the French surgeon Labey performed the first successful embolectomy. The embolus had lodged in the common femoral artery and was removed six hours later. From 1911 until 1934 surgical removal of arterial emboli was the preferred treatment. Buoyed by the introduction of vasodilator drugs, sympathetic blocks, and anti-coagulants in the mid 1930's, physicians did an about-face resulting in a non-operative or "conservative" approach to patients with arterial emboli.

Heart thrombi contribute more than 90 per cent of arterial emboli and these patients have either auricular fibrillation, rheumatic heart disease with mitral or aortic valve damage, myocardial infarction (up to ten per cent may be "silent"), or endocarditis. Almost three-fourths of peripheral emboli lodge in the lower extremities (42 per cent in femoral arteries, 15 per cent in iliac arteries, and 15 per cent in popliteal arteries), 17 per cent of emboli lodge in the upper extremities, and 11 per cent in the aorta. There is more danger of gangrene with an embolus in the leg than with an embolus lodged in the arm. Because of collateral circulation the embolus lies closer to the heart than one may suspect. For example, the skin temperature change in patients with an iliac embolus is mid-thigh, with femoral embolus is near the knee, and with a popliteal embolus is near the ankle. The severity of ischemic pain, hypoesthesia, paresis, coolness, pallor, and cadaverish marbleization depend on the location, completeness, rapidity, and duration of obstruction. Pre-existing collateral vessels plus the extent of thrombosis retrograde and proximal to the embolus are also important.

It is both illogical and unfortunate that physicians parrot the term "conservative" treatment of peripheral emboli connoting non-surgical treatment. So-called "conservative" treatment results in a mortality figure of 47 per cent for aortic emboli, 39 per cent for common iliac emboli, and 36 per cent for common femoral emboli. Additionally, post-embolic ischemia with claudication and/or gangrene may occur in the survivors of "conservative" or non-operative treatment. In essence, conservative treatment for emboli to the aorta, iliac, or femoral areas is the earliest possible surgical removal of such emboli. Arterial embolectomy yields a lesser mortality than non-operative treatment, as well as restoration of blood flow and function to the extremity.

Administration of heparin should be instituted as soon as the diagnosis of peripheral arterial embolus is entertained in order to limit thrombosis in the collateral and distal vessels. Peripheral arterial embolectomies can be accomplished in elderly, poor-risk patients under local anesthesia. In poor-risk patients with a saddle embolus at the bifurcation of the abdominal aorta, a bilateral femoral approach under local anesthesia permits embolectomy in a retrograde fashion.

Whenever possible, surgical removal of peripheral arterial emboli should be performed since embolectomy yields a greater saving of life, limb, and function.

* * *

Available by writing to the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma, is a set of 35 mm lantern slides of pathologic optic fundi which would be appropriate for meetings, conferences, lectures, etc. A descriptive key accompanies these slides.

*Professor of Surgery and Chief of Thoracic Surgery, University of Oklahoma Medical Center, and Acting Chief of Surgery, Oklahoma City Veterans Administration Hospital.

Dean's Message

Administrative problems, which consume hours greedily, have never obliterated my interest in commendable academic accomplishments and thoughtful recognition of them. An immediate gratification is the very wholesome attitude and mature outlook recently evinced by the student body of our medical school when the Student Council established two annual Aesculapian Awards for faculty members in the preclinical and clinical fields. The initial 1962 awards were made to Professor G. H. Daron of the Anatomy Department and Assistant Professor Jimmy Simon of the Pediatrics Department. These awards recognize, from the student viewpoint, outstanding contributions to the field of medical education and devotion and dedication to the instruction and training of medical students.

This heartening acknowledgement, by students peering into the future, poses a challenging example for the medical scientific world, in which honors are directed largely to areas of research and discovery, which, of course, would necessarily come to a speedy cessation if or when new physicians and medical scientists are no longer developed by the devoted faculty members in our medical teaching centers.

Contemplation of this action by our student body leads me to important consideration of attitudes, for who can separate his faith from his actions, or his belief from his life's work? Who can review his own activities and say, "This was done for the profession, and this other for myself," when the giving of one's self is the greatest satisfaction, and working with dedication and responsibility charges those about us with a share of our own spirit? Gibran epitomizes thus: "If you bake bread with indifference, you bake a bitter bread that feeds but half man's hunger. And if you sing though as angels and love not the singing, you muffle men's ears."

Assets for becoming a successful medical teacher include a continuing interest in the progress of the medical school and the university, and remaining a student at heart. Also important is an appreciation of students as the coming generation, which will carry on in a day so different from ours that we cannot picture it accurately. To understand the point of view of these young students, who are (thank goodness) not wholly satisfied with the less than ideal present, and to make mature allowance for some follies and inexperience while encouraging worthwhile endeavors and helping to fortify them for their future, constitute a challenge of some magnitude. In my opinion, instructors can develop their capacities for meeting this challenge by self-examination. And it is of great advantage if one can develop a kindly sense of humor, acquire an ability to see more than one aspect of a thing at a time, and help the student to relate a new idea to something already present in his mind.

I want to add my personal appreciation of the students' forward look and my praise to those honored by the Aesculapian Award this year. Time, that ever-rolling stream, brings a vanishing perspective to all of its sons, but the spirit and devotion which we exert in our work serve as inspirational catalysts to future physicians and medical scientists. In this sense the accomplishments of teachers have much to do with the house of tomorrow, an abode denied to us personally but not to our students, who will then maintain the ethical heritage of medicine and science.

Mark R Everett

Medical Grand Rounds

Edited by
WILLIAM E. HUGHES, M.D.

Doctor Wolf: Today we are going to consider disturbances of serum protein, both quantitatively and qualitatively. Doctor Shook will tell us about two patients, and then will present the patient for consideration this morning.

Doctor Shook: The first case, Mrs. W., is a 54-year-old colored female, who for the last ten years has noted intermittent swelling of her neck and arms. Three months ago she developed weakness, shortness of breath, and occasional febrile episodes. The weakness and shortness of breath gradually progressed until she was unable to work, even becoming exhausted walking about in her house. When she came to this hospital, it was noted that she had generalized lymphadenopathy, and was extremely anemic. Biopsy of a lymph node in her neck was determined to be a lymphoma. During her hematologic work-up it was noted that her blood clotted very quickly; it was almost impossible to get it in and out of a syringe without clotting. Further study of her serum, including paper electrophoresis and ultracentrifugation, revealed that there was a macroglobulin present. Her urine contained no Bence-Jones protein.

The second case is that of Mrs. C., whose symptoms began a year and a half ago. These consisted primarily of an intermittent erythematous rash on her lower legs. Three or four weeks before admission, she developed a "cold" which persisted until admission. Further questioning disclosed she had a tentative diagnosis of tuberculosis made about 20 years ago, but this was not confirmed at an Indian hospital in this state. She had some visual and auditory difficulty. She noted tingling in her hands, especially in cold weather, which she attributed to poor circulation. Physical examination revealed a purpuric rash limited to the lower extremities below the knees. Her serum contained a cryoglobulin, and Bence-Jones protein was present in the urine. In both of these patients, the bone marrows have been abnormal, both of them being suggestive of multiple myeloma. Mrs. C., the second patient, has nests of abnormal plasma cells similar to those seen in multiple myeloma. Mrs. W. has a rather marked increase in her plasma cell count. The morphology of the plasma cells is abnormal but not diagnostic.

The third patient, who is the prime patient for consideration this morning, is Mr. B. B. He is a 27-year-old white male whose health has been excellent until the middle of August, 1961. At that time, he noted extreme shortness of breath while lying in bed and had to sit up to get his breath. The symptoms subsided slowly, and he had no trouble

during the following week. He then had a recurrence of dyspnea which gradually got worse. He also noted that his feet and abdomen had begun to swell and his face seemed to be puffy and enlarged. The dyspnea progressed until he could not walk across a room without being completely out of breath. He had to maintain an upright position at all times. He was admitted to the VA Hospital where he was placed on a diuretic regimen. He was kept there approximately a week and then was transferred to the University Hospital. The patient has had the usual childhood diseases with no known sequelae. He has had no previous operations or injuries. He states he has been immunized for smallpox and there is a scar on his upper arm to confirm this. While in the service he received numerous injections which we have assumed included typhoid. He had no knowledge of diphtheria immunization and at this time his Schick test is positive. He has not had skin tests for tuberculosis, histoplasmosis, or coccidioidomycosis prior to this hospital admission. The review of systems is entirely negative. The patient has two sisters and three brothers. His father died at the age of 38 years of unknown cause. One sister is in poor health which the mother attributes to having too many children too rapidly. One brother was born with a cleft palate. From information obtained from the patient, there is some emotional instability in the family. However, the patient is the only member of the family who has been hospitalized for this reason. He was admitted to Central State Hospital in 1959 with a diagnosis of schizophrenia.

Physical examination at the Veterans Administration Hospital and University Hospital revealed signs of congestive failure. There was generalized cardiomegaly, the left heart border being in the anterior axillary line. There were no murmurs, but there was a sinus tachycardia with a diastolic gallop. There were rales in both lung bases, and marked swelling of the hands, feet, legs, and abdomen. His face and eyelids were puffy. The hemoglobin was 13.5 grams per cent, with a white count of 800/cmm. Throughout this period of time the leukocyte differential has been normal. Repeated urinalyses revealed that the specific gravity has not been

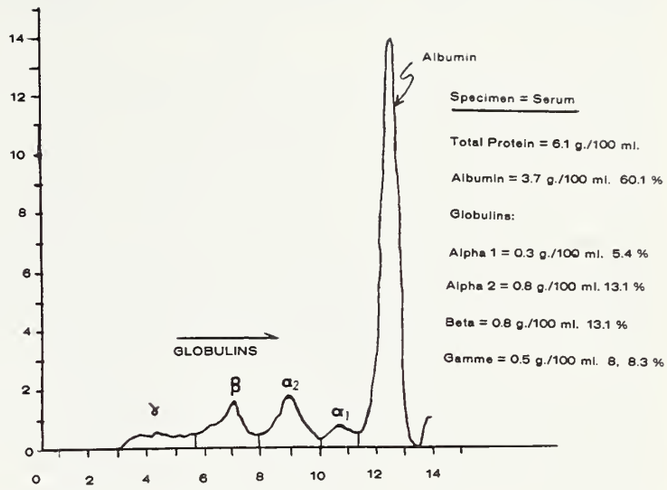


Figure 1. Serum protein electrophoretic pattern of patient B. B., showing decreased gamma globulin.

above 1.010, but no other urinary abnormalities have been found. Blood urea nitrogen was 14 milligrams per cent, the fasting blood sugar was 80 milligrams per cent. He has had a multitude of tests, including liver and renal function tests, all of which have been within normal limits. A serum protein electrophoretic pattern revealed hypogammaglobulinemia, the gamma globulin appears to be virtually absent on electrophoretic patterns (figure 1). The actual measurement of his gamma globulin was 300 mg. per cent. Otherwise, serum protein values were normal. The rest of his studies include liver, rectum, skin, and muscle biopsies. All of these were normal. Ten days ago, his total protein had risen a gram and a half, and his electrophoretic pattern showed 600 mg. of gamma globulin. The most recent one, however, once again showed 300 mg. per cent gamma globulin. In our laboratories values of gamma globulin below 800 mg. per cent are definitely abnormal, normal values being above 1.2 grams per cent. Electrophoretic patterns of serum proteins from the patient's mother, brothers, and one sister are normal. Electrocardiograms have always been within normal limits, except for nonspecific T-wave changes. A phonocardiogram confirmed the diastolic gallop. Bone marrow aspiration showed the cellular ratio to be normal with the exception of the plasma cells. Only five per cent plasma cells were seen in 3000 bone marrow cells counted, and these five plasma cells were abnormal in appearance (Normal: five plasma cells/

100 nucleated cells). Studies to evaluate the hypogammaglobulinemia have included multiple agglutinations. Isoagglutinins are present and predictable for his blood type (A_1). Febrile agglutinins, viral agglutinins done by the State Health Laboratory, and fungus agglutinins are all negative. Skin tests for tuberculosis, histoplasmosis, and coccidioidomycosis were negative. He has been stimulated with diphtheria toxoid and with typhoid vaccine, but it is too early to determine if there will be an appropriate antibody response. The impression of the ward personnel was: (1) Myocarditis, idiopathic and (2) Hypogammaglobulinemia, idiopathic.

Doctor Wolf: We have three patients, then, under consideration—two women and one man. One woman came with symptoms related to anemia and showing lymphadenopathy. She was found to have lymphoma, macroglobulins, and a bone marrow aspiration containing increased numbers of plasma cells. The second woman had a recurrent rash over her lower extremities and tingling of her hands in cold weather. Her bone marrow contained nests of plasma cells, Bence-Jones protein was detected in her urine, and a cryoglobulin was demonstrated in her serum. The third patient complained of symptoms due to congestive heart failure. There were decreased numbers of plasma cells in his bone marrow and his serum gamma globulin was significantly depressed. Doctor Bolene, would you show the x-rays of this man's chest?

Doctor Bolene: The initial film that I have is dated October 25, 1961. There is generalized cardiomegaly. The vascularity is distinctly increased and there is haziness in the bases. No evidence of pleural effusion is noted, the costophrenic angles being clear. The lateral view shows generalized pressure upon the esophagus, and some impingement anterioraly demonstrating generalized dilatation of the heart. Both diaphragmatic leaflets are clear, but the vascularity is distinctly increased and hazy and there is probably some congestion. The last films that I have on this gentleman, dated December 11, 1961 (figure 2) show generalized cardiomegaly. The vascularity is still slightly prominent,

Figure 2. Chest x-ray of patient B. B., demonstrating cardiac enlargement and pulmonary congestion.

although it is now sharp and clear with no real evidence of edema. The heart size has changed very little. It's one centimeter less, which can be accounted for by changes from systole and diastole. There is calcification in the parahilar nodes and there are two calcified nodules in the lungs. There is no evidence of old apical disease or any evidence of fibrotic infiltrates or old infiltrates. The lateral view confirms that there has been very little decrease in the heart size.

Doctor Wolf: Doctor Woods, I think that you can see that we are puzzled by this problem. We need enlightenment with respect to serum proteins. What is the significance of the macroglobulin? What is the significance of the cryoglobulin? What is the significance of Bence-Jones proteinuria? What is the Bence-Jones protein, and is the relation of this to cryoglobulin intelligible? Would you sort for us these dysproteinemic patterns and relate them to the pathology?

Doctor Woods: The question of abnormal proteins of the blood has plagued clinicians ever since Tiselius invented his machine in 1939, which separates proteins in an electric field. This problem has been further complicated by the simplification of electrophoresis so it can be done on paper. Since then, it has been compounded by the fact that if it is done in starch gel many more fractions can be defined. The final complication in the picture has been the ability to separate the proteins very minutely in starch gel by electrophoresis and then perform an immunodiffu-

sion at right angles to this. I would like to review very briefly the normal picture in the serum, or what we at least call normal, what normal macroglobulins are, where they are, how they differ from other types of globulins and perhaps try and conjure this into a pattern from which we can treat abnormal people. I have put on the blackboard a free hand sketch of what an immunoelectrophoretic pattern looks like. (figure 3) Let me explain to you what has been done here. This we might imagine as a microscope slide, a regular three by one inch slide which has been coated with a thin layer of agar and a small well has been cut in it at this point. Into this well has been put a drop of serum, and the electrophoresis has been carried out with a positive pole at one end and a negative pole at the other end, the pH being adjusted somewhere around eight. Under these conditions the serum protein will spread out with the albumin up at the positive end and the gamma globulin the negative end. Anti-human serum protein serum is then placed in a trough cut in the agar which runs down the middle of the slide longitudinally. The antiserum diffuses into the agar and reacts with the human protein resulting in lines of precipitation.

In the old days before we used starch, we recognized albumin, alpha globulin, beta globulin and gamma globulin as the normal four components in serum. Now with refined techniques we can recognize two types of alpha globulin which we call A1 and A2, two types of beta globulin and now two types of gamma globulin. Gamma 2 is what we might call the normal gamma globulin, the kind that we were dealing with mainly before starch came in. Gamma 1, however, represents a macroglobulin which is normally present in the serum.

By the use of immunoelectrophoresis, we have been able to find several genetic abnormalities in the serum proteins. These have included a genetic abnormality in albumin. We now know that there are at least two types of albumin which can be classified according to simple mendelian genetics, that there are approximately four types of haptoglobin which are susceptible to genetic analysis. There are at least two, and perhaps four, types of transferrins which are the beta globulins responsible for carrying iron. There are probably two types of gamma globulin, so-called gm group, which are characterized mainly in the gamma 2 band.

We can say that any one of these proteins is capable of having a quantitative abnormality, by that I mean either too much or too little. The abnormalities which concern us principally are the ones where a protein is depressed, eg., hypoalbuminemia. A number of patients with complete absence of serum albumin have been described. We know that an absence in the serum plasma of the protein that carries copper exists, producing Wilson's disease. We know that patients can have very low levels of transferrin, the protein which carries iron, leading to a picture of iron deficiency anemia which is quite resistent to iron therapy. However, these are by and large in the minority; most of the cases with which we deal being abnormalities of the gamma globulin fraction. Therefore, let's examine it for a minute.

The normal gamma globulin is the gamma 2 fraction. We can study this by electric migration, i.e., electrophoresis, but if you limit your thinking to where this thing migrates on paper or starch gel, you will be making a considerable error. Remember that an abnormal protein can migrate between beta and alpha globulin and still immunologically be gamma globulin so that whether it migrates one place or the other does not stamp it as being an alpha, beta, or gamma. We would like to believe that the immunological relationship of these proteins is far more meaningful and valuable than the simple electric field. This is just a consequence of charge and mass so that when I say that we are dealing with gamma globulin by and large, I mean anything that migrates like gamma globulin in an electric field and is immunologically related to the gamma. We have normal gamma (gamma 2) which has a molecular weight of about 160,000, and a sedimentation velocity on ultracentrifugation of about 6.6 Svedberg units. We know it contains about 2.5 per cent carbohydrate largely made up of hexose and hexosamine. There is practically no sialic acid in normal gamma globulin. About 90 per cent of the total serum gamma globulin is made up of

this fraction. Gamma 1 migrates slightly ahead of the gamma 2. The gamma 1 is also called the beta 2_m, because it is either a slow beta or a fast gamma depending upon how you look at it. This gamma normally constitutes about 10 per cent of the gamma globulin. It has a molecular weight of approximately 900,000, varying between 700,000 and over 1,000,000. Its sedimentation constants are mixed. Most of them are around 19, but may vary from 14 to 44. As you can see, there is quite a difference in molecular size. It varies in its carbohydrate content, being 10 per cent carbohydrate roughly, quite a good deal of which is sialic acid. Sialic acid increases the viscosity of glycoprotein and the viscosity of the blood is considerably increased when the gamma 1 globulins are elevated. This leads to many manifestations of diseases in which these proteins are elevated, e.g., clotting or thrombosis.

Let's think for a minute of the significance of these two gamma globulins because it's only from an understanding of this that we can make any sense out of paraproteinemia. By and large the gamma 2—the 90 per cent fraction—contains antibodies against most of the soluble antigens to which we are exposed. The gamma 1 fraction, the macroglobulin, contains antibodies against most of the particulate antigens, e.g., whole bacteria, and red cells. Isohemagglutinins, the Wasserman antigen, and the heterophile antibody of mononucleosis are macroglobulins. For example, the typhoid O antibody is a macroglobulin. The typhoid H, which is the flagellar antibody, is a gamma globulin. As we know, in typhoid fever, the H antibody titer may rise early, but is inconsistent, and one may have typhoid fever without an H agglutinin present, whereas the O antibody is more enduring. We also know that, by and large, particulate matter which is antigenic is removed from the blood stream by the spleen, whereas soluble antigens are removed from the blood stream by peripheral lymph nodes. By this reasoning it has been suggested that most macroglobulins are normally made in the spleen, whereas 7s globulins are made in the reticuloendothelial system. One example of this is in rheumatoid arthritis. The rheumatoid factor is a macroglobulin. It is particularly elevated in Felty's syndrome, which is hypersplenism associated with rheumatoid arthritis. Under these conditions, when the spleen is removed, a sharp fall in the titer of rheumatoid factor is not uncommon. However, after a period of time it may rise again, indicating that although the spleen may be the principal site, it is not the unique site of manufacture of this protein.

Now that we are in a position to talk about some of the pathological points, the best way of doing this is to separate them into diseases in which there are too few normal proteins and diseases in which there are abnormal ones. Let's begin with the agammaglobulin, hypogammaglobulin syndromes. Let me review this very briefly with you. There are four types of reduction in gamma globulin involving both the gamma 1 and the gamma 2 types of gamma globulin. The first type is congenital. This has been well studied. It is present from birth and involves males predominantly, who demonstrate no gamma globulin by electrophoresis. However, by using immune techniques, one finds that they have between zero and 25 mgm per cent of gamma globulin. They have no isohemaglutinins which, you remember, are macroglobulins. This is one of the main things which distinguishes this group from the secondary group.

The second type is acquired hypogammaglobulinemia. We don't know much about this type. There is a good deal of wrangling about whether there is a genetic background in this group. Some people think that it is inherited as diabetes is. It expresses itself usually in adults and older children. The gamma globulin levels usually range above 250 mgm per cent. It's a loose group that is hard to define. It is associated with no other known disease. There is no clue as to why these patients become hypogammaglobulinemic. They usually have isohemagglutinins but they may be low in titer.

The third group we will pass over very quickly. These patients have transient hypogammaglobulinemia, i.e., levels around 300 mgm per cent. It is seen in children between the ages of three to seven weeks. This represents the point at which the child who re-

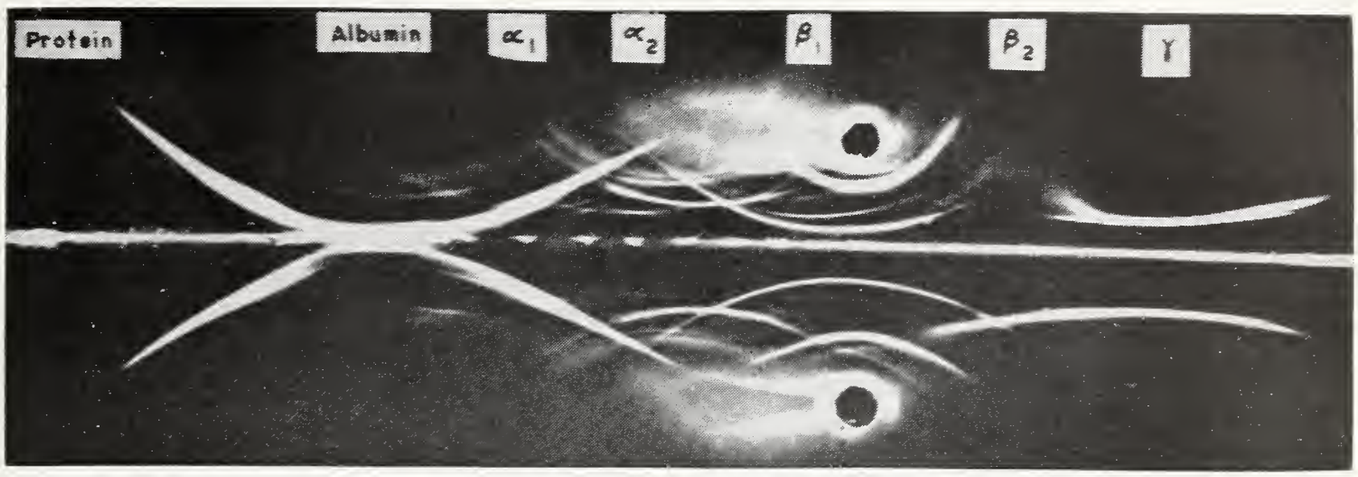


Figure 3. Representative immunoelectrophoresis in agar. Human serum placed in the wells (seen below[1]) was electrophoresed from right (+) to left (—). Anti-human serum protein horse serum was then placed in a longitudinal slit cut in the center of the agar and allowed to diffuse into the agar. The resulting lines of precipitation are identified at the top of the figure.

ceived gamma globulin from its mother must begin to manufacture globulin. If the child is slow in initiating gamma globulin production, there is a period during which he becomes low in gamma globulin. This is a self-limiting disorder.

The fourth type is the secondary type of hypo- or agammaglobulinemia. It is associated usually with a disease of the reticuloendothelial system. Some types of carcinoma will also produce hypogammaglobulinemia. Sometimes in a disease such as multiple myeloma there is a tremendous burst of abnormal protein synthesis in the beta globulin. It is almost as if the gamma globulin-making machinery has been induced to make an entirely abnormal type of globulin. This may occur either fleetingly or as a prolonged manifestation of one of these diseases. These people, of course, are fascinating because of the fact that they have enabled us to see that an individual with no circulating gamma globulin is susceptible to many pyogenic infections. However, these individuals are as resistant to viruses as normal people. They show delayed skin reactions as normal people do, and they seem to reject homographs, by and large, almost as well as normal people do. So delayed sensitivity and viral resistance are preserved in these individuals. Thus it appears that there is more to resistance than meets the eye.

Our patient today has 300 mg. of gamma globulin. This is a reduction to about 1/4 of the normal titer. We would like to think that a normal individual would have around 1200 mg per cent. Is this secondary to a virus disease which has involved his reticuloendothelial system and depressed gamma globulin formation? I think that it is probably better not to dwell on this too long since it's all fairly idle speculation. We really don't know what depresses the formation of the gamma globulin in these individuals. In him it will be important to find out whether it persists. If it does, I think we must put him in the secondary group, idiopathic acquired hypogammaglobulinemia.

Now let me turn very quickly to the macro- and cryoglobulins. One of the things which confuses us clinically is multiple myeloma. Multiple myeloma is a tumor of plasma cells and may produce proteins migrating, as we said, in any globulin fraction, but which are immunologically related to gamma globulin. By and large, however, the abnormal protein in multiple myeloma is a 7s protein. It is not a macroglobulin in most cases but the presence of a macroglobulin does not rule out multiple myeloma. There are obvious exceptions. The Bence-Jones protein which occurs in multiple myeloma is about a 3.5s protein and people have speculated that this represents half the myeloma protein. This was supported by some early work showing a deficiency of methionine in this protein, keeping it from linking together and thus it was being made as two halves. Now it is thought that Bence-Jones protein is synthesized independently of the myeloma protein. It was felt that the Bence-Jones protein was diagnostic of multiple myeloma when it was present in the blood or in the urine. However, there have been contradic-

tory reports as to whether this exists in so-called Waldenstrom's macroglobulinemia. One report describes Bence-Jones proteinuria in nearly one third of the cases of macroglobulinemia. Two other authors who studied 13 patients found none, so it is very difficult to know. We think that macroglobulinemia occurs as a distinct and separate disease from multiple myeloma. Whether or not you wish to call this Waldenstrom's macroglobulinemia is up to you. The disease is characterized usually by bleeding tendencies due to adsorption of clotting factors by the large protein. It is characterized also by thrombosis ulcerations, and gangrene, secondary to increased blood viscosity and thrombosis. If there is a "cryo" part of the protein, i.e., if it is insoluable, there may be a Raynaud-like syndrome with extreme cold sensitivity in the extremities. There may be neurological manifestations due to either infiltration of the central nervous system or by precipitation of the paraprotein. It doesn't occur until after the age of six. Occasionally it may be fatal. The type of cell which makes this protein is a cell which has multiple little white globules in the cytoplasm the so-called Waldenstrom's paraproteinemia cells. If you see one, the diagnosis can be made because they are very characteristic.

As far as our patients today are concerned, I would say that the first one with the macroglobulinemia probably does not have multiple myeloma, but may have a type of Waldenstrom's macroglobulinemia. There are, however, many pitfalls. A patient with severe rheumatoid arthritis could have macroglobulinemia. One with a very high Wassermann antibody could masquerade as such. The second patient with the cryoglobulinemia and the Bence-Jones proteinuria, I feel probably does have multiple myeloma. Most commonly cryoglobulins are seen in patients with myeloma. The presence of Bence-Jones protein also seems suggestive. The third patient, I would rank in the acquired group of hypogammaglobulinemias.

Doctor Wolf: Doctor Muchmore, would you discuss the problem of lowered gamma globulin, especially with respect to the resistance to infection?

Doctor Muchmore: The normal event, as the body is beset by various little parasites and other interesting beasts, follows a series of patterns that we might think about a minute. There are various means of defense to prevent entry of the organism, but in one way or another the defenses are breached in a warlike fashion, and, after the entry, there is spread. Again we have various defenses and mechanisms to prevent this event. The organism, whether it be a virus, bacterium, rickettsia, or other, multiplies and again we have various defenses or mechanisms to limit multiplication. If these things are ineffective, the host shows signs of difficulty which we call disease.

We have all heard of lysozyme which is an enzyme which interferes with bacterial serenity, causing the organisms to deteriorate and blocking multiplication. From our side this is good, but if we were on the bacteria's side, it's not so good. At any rate, lysozyme and other enzymes, hydrochloric acid—which is a very effective sterilizer present in the stomach, the salt in the skin and the fatty acids are all antibacterial and probably help in some way to prevent entry and spread of bacteria. There are also various substances in the blood stream that are not specific antibodies, the most widely talked about being properdin.

Then there are specific participants in this little drama, and these are divided into the humoral, which are the gamma globulins that we have discussed this morning, and the cellular consisting primarily of macrophages which engulf and destroy the invading organism. The presence of both of these conditions, the humoral (gamma globulins), and the cellular (macrophages), is necessary for a satisfactory outcome to us. It is interesting that when bad globulins are present, as we noted this morning, the result is not good. The patient doesn't do well. When bad cells are present, i.e. in leukemia, the cells do not phagocytize and destroy organisms satisfactorily. It is of particular interest that gamma globulin antibodies apparently cause a remarkable increase in the attraction of these foreign organisms to the macrophages, allowing them to engulf and destroy the organism. When gamma globulin (antibodies), either specific or non-specific is absent, the macro-

phages may ignore the foreign particle, they may engulf it and forget about it, or they may fail to discard it. Under these conditions the organism may continue to multiply and ultimately destroy the phagocytes.

The body is continually beset by bacterial invasion all day long by the act of chewing, defecation, tooth extraction, etc. In studying these events carefully, it becomes apparent that there is an extraordinarily effective series of events that maintain this delicate balance in which the "good guy always wins." When bacteria invade the blood stream after a tooth extraction, the bacteremia exists for only a few minutes, the organisms disappearing quickly, being thoroughly disposed of without difficulty. Apparently, these events are necessary for what we call "normal". In other words, the maintenance of antibodies in the blood depends on this endless recurrence of bacteremia stimulating the production of normal antibodies with normal phagocytes. The situation is perhaps nowhere so well exemplified as in the germ-free animal. These animals, as you know, have no bacteria whatsoever, and apparently no viruses, at least no viruses that do very much. They have developed essentially no antibody gamma globulin. When they are removed from this environment, this very healthy and delightful environment free from all care and turmoil, they very quickly die of bacteremia. This suggests that the body's status quo, the peaceful co-existence, is really an armed truce which is maintained only through recurrent attacks or invasions by the bacterial antigen.

The patients with congenital agammaglobulinemia are subject to a series of bacterial infections which usually result in their early demise. They are relatively resistant to viruses however, particularly to the second attack of viruses suggesting that there is more to resistance to viral invasion than gamma globulin alone. This strongly suggests that there are other as yet undescribed mechanisms acting in the form of immunity. I don't think we know what the third patient has. This was thought to be a viral myocarditis. I think the evidence shows that he probably does not have a viral myocarditis.

Doctor Wolf: What explanation do you have for the patient with hypogammaglobulinemia not having had many infections?

Doctor Muchmore: I think this strongly supports the thesis that this is an acquired hypogammaglobulinemia. Doctor Good's series[1] had a few adults with acquired agammaglobulinemia who usually developed a severe infection which quickly became a series of severe infections and eventually the patient died with bacteremia. I think this young man may pursue a similar course.

Doctor Wolf: If there is no further discussion, I wish to thank the discussants for a most stimulating morning. The meeting is adjourned.

REFERENCE

1. Good, R. A., Bridges, R. A., Condie, R. M.: Host-parasite Relationships in Patients with Dysproteinemias. Bact. Rev. 24: 115-132, March, 1960.

AMA MENTAL HEALTH CONGRESS

The American Medical Association will hold its first National Congress on Mental Illness and Health in Chicago, October 4-6.

The purpose of the Congress is to implement the broad, new mental health program developed by the AMA's Council on Mental Health. Specific activities for putting the program to work will be discussed during the three-day meeting.

Topical meetings at the Congress will cover twenty-one subjects including research, hospital and community programs, personnel recruitment and physician education. After these meetings, regional workshops will be held for the purpose of transforming the ideas into action at the state level.

The Congress is open to all physicians and interested citizens. More detailed information is available from the Council on Mental Health, AMA, 535 N. Dearborn Street, Chicago, 10, Illinois.

TWENTY-TWO BEGIN INTERNSHIPS

Seventy-four new House Staff members started training in the Medical Center hospitals July 1.

Beginning internships at University and VA Hospitals were 22 young physicians and two dentists. Fifty-two doctors embarked on residency or fellowship programs.

Seven of the incoming interns are 1962 graduates of the University of Oklahoma School of Medicine: Grady Lynn Jeter, M.D., James Stafford Reed, M.D., Ramon Arthur Shane, M.D., Henry Kirven Speed III, M.D., Michael Howard Whalen, M.D., Paul Edward Donat, M.D., and Thomas Leroy Whitsett, M.D. Doctors Donat and Whitsett are interning at VA Hospital.

Others and the school where they received the M.D. degree are:

At University Hospitals—George Wallace Carlson, M.D., Loma Linda; Lois Davies, M.D., University of Pittsburgh; William Henry Gondring, III, M.D., Washington University; Charles Alvis Gunter, M.D., Southwestern; Samuel Eliott Halpern, M.D., University of Louisville; Robert Gentry Kendall, M.D., Medical College of Virginia;

James R. Kennedy Jr., M.D., University of Virginia; Norton Stanley Kronemer, M.D., University of Missouri; Ned Allan Kuivinen, M.D., Ohio State; Frank Irvin Nicks Jr., M.D., Duke; David Calvin Rausch, M.D., University of Cincinnati; Walter Maurice Sonntag, M.D., University of Utah; Larry Waterbury, M.D., University of Texas.

At VA—Joseph Vernon Cook, M.D., University of Utah, and Calvin Robert Johns, M.D., Howard University.

In dental and oral surgery—William K. Homan, D.D.S., and Hugh Bob Tilson, D.D.S., both of Baylor.

New residents and fellows, with their prior location or position, are:

Anesthesiology — Don Bernamonti Jr., M.D., Muskogee.

Dermatology—Robert Jones Boren, M.D., and Robert L. Olson, M.D., military service.

General surgery—Lanny G. Anderson, M.D., and Jack T. Dancer, M.D., former OU interns; Dolores A. Buchler, M.D., Kansas Medical Center; Thomas G. Daniel, M.D., Tinker Air Force Base; Billy P. Loughridge, M.D., Texas Medical Branch; David M. Selby, M.D., California Medical Center; Herbert M. Krauitz, M.D., Mercy Hospital.

Neurosurgery—Lloyd M. Garland, M.D., former OU intern.

Oral surgery—Angelos P. Angelopoulos, D.D.S., and Allen A. Coughenour, D.D.S., former OU interns.

Gynecology and obstetrics—Preston W. DeShan, M.D., and Harold D. Thiessen, M.D., Wesley Hospital; Asa Standley Porter, M.D., OU interns.

Medicine — Melvin L. Brill, M.D., St. Johns' Hospital, Tulsa; Alan E. Bures, M.D., Ronald D. Clark, M.D., Charles L. Jobe, M.D., June May, M.D., Max G. Walters, and Thomas R. Treece, M.D., OU interns; Richard G. Dotter, M.D., Wesley Hospital; Donald L. Hicks, M.D., VA Hospital; Joseph D. Sapira, M.D., University Presbyterian Hospital, Pittsburgh, Pennsylvania; Leon Stein, M.D., Baylor Hospital, Houston, Texas; Michael Worona, M.D., General Hospital, Edmondton, Alberta, Canada; Mary E. Puntenney, M.D., Mercy Hospital.

Ophthalmology—William Stanley Muenzler, M.D., Evanston (Illinois) Hospital; William F. Old, M.D., Kresge Eye Institute, Detroit, Michigan; Robert P. Shaver, M.D., and Stanton L. Witter, M.D., St. Anthony Hospital.

Orthopedic surgery—LeRoi B. Gardner, M.D., Mary Hitchcock Memorial Hospital, Hanover, New Hampshire; Joe B. Jarman, M.D., and Lowell N. Templer, M.D., St. Anthony Hospital; Kenneth H. Johnston, M.D., U.S. Navy, Dallas; Philip C. Lehman, M.D., St. Lukes Hospital, Kansas City, Missouri; Adolph R. Mueller Jr., M.D., US Air Force.

Otorhinolaryngology—W. B. Moran, M.D., and Kenneth A. Rogers, M.D., Wesley Hospital.

Pediatrics — W. H. Dunlap, M.D., and Charles D. Haunschild, M.D., OU interns; Marinus Flux, M.D., OU fellow; William R. McLean, M.D., Akron, Ohio; Gerald Andrew Wagner, UCLA Medical Center.

Psychiatry—Joseph F. Alderete, M.D., US Public Health Service, Lexington, Kentucky; Mabelle S. Collins, M.D., Oklahoma City; John D. Karns, M.D., Winemac, Indiana; Joseph B. Ruffin, M.D., Claremont, California; John R. Smith, M.D., Memorial Medical Center, Williamson, West Virginia; Emery B. Ulrich, M.D., Crosby, Minnesota.

Radiology—John D. Bush, M.D., Hillcrest Medical Center, Tulsa; Douglas D. Dahl, M.D., Tinker Air Force Base.

Urology—Robert L. Allison, M.D., Portland, Oregon.

Senior Students Receive Awards

Major senior awards at the University of Oklahoma School of Medicine commencement June 10 went to Dale Ray Hughes, M.D., Aline, and Jerry Ben Blankenship, M.D., Frederick.

Doctor Huges received the L. J. Moorman Award, given annually to the student who has shown the greatest scholarly attitude in medicine, and Doctor Blankenship won the Onis George Hazel Memorial Award for "most nearly approaching the ideal doctor-patient relationship."

Each also received a Mosby Scholarship Book Award for academic excellence, and, in addition, Doctor Hughes was presented a Merck Manual Award, one of two reserved for "outstanding students in medical studies."

Doctor Hughes is interning at King County Hospital, Seattle, Washington; Doctor Blankenship, at the University of Texas Medical Branch Hospitals, Galveston.

They were among 86 graduating seniors awarded the Doctor of Medicine degree in exercises on the Norman campus.

Other senior honors announced during commencement:

To Patrick Allen McKee, M.D., Tulsa, and Joe Bills Reynolds, M.D., Gotebo, the Student Research Achievement Awards, based on completion of an original investigation and thesis; to Grady Lynn Jeter, M.D., Altus, the Oklahoma City Surgical Society Award, to the outstanding senior student in surgery.

To James Herbert Garner Jr., M.D., Lincoln, Nebraska, the State Dermatological Prize, for the best paper reporting original research in dermatology; to Paul Goodwyn Boren, M.D., Oklahoma City, the American Academy of Dental Medicine certificate of merit for promise in the field of dental medicine.

William R. Kilgore Jr., M.D., Idabel, was given the Mrs. Eugene Fay Lester Senior Book Award for "consistent effort and dedication to his goal as a student." He also received the Smith Kline and French-American Psychiatric Association Award for the best thesis on a psychiatric subject.

Mosby Scholarship Book awards went to Rex Baggett, M.D., Oklahoma City, Ronald Charles Elkins, M.D., Ponca City, and Doctors Hughes, Jeter and Blankenship; and the Merck Manual Awards, to Doctors Hughes and Jeter.

First Year Enrollment Totals 105 For Fall Term

A new first year class of 105 students will enroll in the School of Medicine September 6 and begin classwork September 10.

They were selected from 380 applicants, an increase of more than 100 over those seeking admission the previous year, Philip Smith, Sc.D., associate dean in charge of student affairs, said.

Applications for admission to the 1963 entering class will be accepted until December 1. The application period opened July 1 and the Board of Admissions will begin interviews during September.

KERR KILLS MEDICARE IN SENATE

Speaking last May at the OSMA's 1962 Inaugural Banquet, Oklahoma's Senator Robert S. Kerr predicted a soon-to-happen major crisis in the Senate on President Kennedy's social security health care proposal, and promised that if the legislative measure received Senate approval, it would have to weather "the greatest legislative battle that Washington has ever seen."

The Senator was prophetic on the crisis and faithful in his promise to protect health care freedom . . . for it was he who masterminded the demise of the Administration's social security bill.

The crisis occurred when Senator Clinton Anderson (D., N.M.) tried to railroad a social security health care bill through the Senate as an amendment to a House-passed welfare reform bill.

To the Administration's surprise and embarrassment, the measure was tabled in the Senate on July 17th, by a 52-48 vote.

House Balks: Senate Bolts

The stage was set for a Senate showdown when the House of Representatives' version of the legislation, H. R. 4222, was pigeonholed in the House Ways and Means Committee, making it pretty obvious to Administration officials that the conservative-minded House was not going to cooperate in the socialistic scheme.

Since all revenue bills traditionally originate in the House of Representatives and are routinely subjected to the judgment of the Ways and Means Committee, under normal circumstances the issue should have been dead for the 87th Congress.

But not so in these days of the New Frontier.

Administration and Senate Democratic leaders confidently decided to force a Senate vote, and thereby pulled one of the major strategy blunders of the present Administration.

Although they realized that a Senate-passed version would undoubtedly be killed in the House, they hoped an affirmative Senate tally would demonstrate Democratic support for the program, and leave Republican Senators with the problem of answering for their negative votes in the November elections.

Instead, Democrat Kerr moved to table the amendment, then proceeded to help organize a bipartisan coalition to support his motion. At the showdown, 31 Republicans and 21 Democrats, including Oklahoma Senator Mike Monroney, voted against the Administration proposal, and 43 Democrats and 5 Republicans combined to support the health care plan.

On Monday, the day before the Senate vote, Kerr took the floor and addressed the Senators for one and one-half hours, effectively defending the philosophy of the Kerr-Mills Act as being more acceptable legislation, and pointing out the excessive waste and unnecessary controls present in the Administration's social security plan.

He also reminded the Senators that the measure, if passed, would not become effective until 1964, then raised the question of the need for such urgent action as proposed in the Senate; action which would necessitate bypassing the House Ways and Means Committee and the Senate Finance Committee, both of which traditionally rule on revenue measures.

Kerr challenged the political motivation of several of the Senators who were sponsoring the amendment and emphasized the shortcomings of the bill. For example, he stated that although the proposal promised nursing home care, such care would actually be available in only 500 of the 20,000 nursing homes in the United States (the rest would not qualify because they are not affiliated with a general hospital).

Kennedy Angered

A grim-faced President Kennedy reacted quickly and heatedly to the humiliating defeat, when he took to television and called the Senate vote "a most serious defeat for every American family, for the 17 million Americans who are over 65."

He blamed the Republican Party and the American Medical Association for the setback to his New Frontier program, apparently forgetting that one-third of the Democratic Senators also bolted from the Administration fold.

To the detriment of the Democrats who voted against him, he urged that the voters express their support for his plan in the November Congressional elections. Also, he promised his television audience that the bill will be introduced again in Congress next year.

OSMA On Hand

At the request of Senator Kerr, a delegation of physicians from the Oklahoma State Medical Association flew to Washington on July 15th to advise and assist him in his efforts to defeat the legislation.

Included in the group were: J. Hoyle Carlock, M.D., OSMA President; Walter E. Brown, M.D., Past-President; Francis A. Davis, M.D., State Chairman of the Oklahoma Medical Political Action Committee; John E. McDonald, M.D., member, AMA Legislative Committee; and Malcom E. Phelps, M.D., OSMA Delegate to the AMA.

In addition to their contact with Kerr, the group also had several sessions with Senator Monroney and called on Oklahoma members of the House of Representatives.

An Expanded King-Anderson

The measure rejected by the Senate contained the basic elements of the Administration's original medical care proposal, the King-Anderson Bill, but also provided for the coverage of some two and one-half million over-65 persons who are not eligible for social security benefits.

As in King-Anderson, the Senate version would have provided up to 90 days a year of hospital care and up to 180 days a year of nursing home care, plus limited physician services and outpatient care. For social security eligibles over age 65, the measure would have been financed by one-fourth per cent increase in social security taxes—for both employee and employer—and by a hike in the taxable wage base from $4,800 per year to $5,200. In the expanded Senate version, the two and one-half million persons not on social security would have had their benefits paid for out of general revenue.

The legislation would have vested great discretionary power of control with the Secretary of Health, Education and Welfare, and would have provided tax paid benefits to all persons over the age of 65, without regard to financial need.

Outlook

According to the Wall Street Journal, some Democratic Senators assert privately that the 52-48 defeat of the Administration's futile strategy play will take the steam out of the medical care movement until after the 1964 presidential election, unless liberal Democrats make unprecedented gains in November's Congressional balloting.

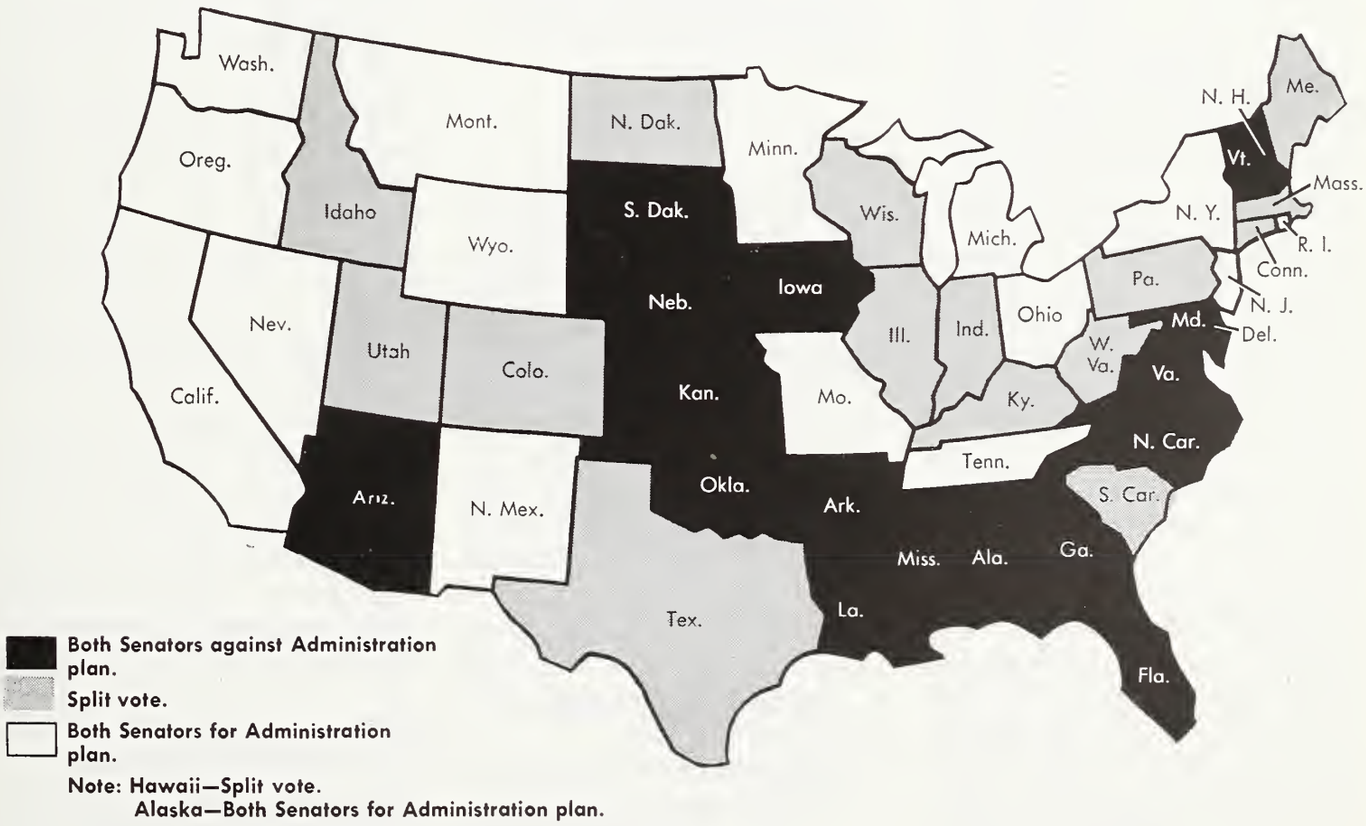
So, while the pro and con elements of the medical care issue will be gearing their machinery for another battle over "medicare" during the 1963 session of Congress, both sides will place immediate emphasis upon the outcome of the November elections. The fate of medicare and other controversial programs of the New Frontier, as Mr. Kennedy says, will be very likely decided at the polls.

In the meantime, insurance firms and voluntary non-profit prepayment plans have interpreted the Senate's vote as a clear mandate to intensify their efforts to sign up more elderly people and to offer them even better health insurance protection.

Blue Shield will begin enrollment in its new national surgical policy in October, through 62 of its 70 plans. It will cost an average of $3.20 a month, and will be promoted jointly with new Blue Cross hospital care plans in most states.

Already some 53 per cent of the elderly are covered by private health insurance, and estimates set the 1969 figure at 75 per cent. Not only is coverage getting better and more readily available to senior citizens,

How They Voted



but the publicity associated with government control efforts is increasing public awareness, and more and more of the elderly are protecting themselves with good health insurance.

Moreover, during the "cease fire" on the Administration's social security health bill, strong efforts will be made by state medical societies across the nation to improve the implementation of the Kerr-Mills Act, medicine's best answer to the problem of financing health care for the indigent elderly.

In Oklahoma's model Kerr-Mills program, $23 million in Federal-state funds were spent last year to provide medical-hospital-nursing home care for old age assistance recipients and "near-needy" persons over the age of 65 (MAA). The Department of Public Welfare estimates that $25 million will be spent next year, as the Medical Assistance for the Aged Program (near-needy) becomes more widely known.

Simultaneously with the defeat of the Administration's social security health care bill, Oklahoma's Public Welfare Commission announced that eligibility requirements for the MAA phase of the state's Kerr-Mills program had been liberalized. Maximum income limits for eligibility purposes, which were previously set at $1,500 for a single person and $2,000 for a couple, were raised to $1,800 and $2,300 respectively. Persons over age 65 may now qualify for health care financing if their incomes fall below the new prescribed maximums and if their assets do not exceed the approximately $14,000 worth allowable under the regulations (includes an $8,000 equity in a home).

Returning from Washington, OSMA President J. Hoyle Carlock, M.D. credited Kerr with the defeat of the socialistic health care bill. "Although the measure would probably have been stopped by the House of Representatives," he said, "Senator Kerr's great leadership in the Senate saved us from a tremendous moral defeat, and will give us increased momentum for future campaigns against socialized medical care programs."

He said "The AMA, state medical societies and their many allies must get braced for repeated attacks on America's health care system, and must do an even better job in taking our message to the people. Very few persons will support the Administration's elder care program if they fully understand it."

"At the same time," Doctor Carlock said, "we must take a positive look at the health problems of the elderly, and make sure their needs are being well met through voluntary health insurance and through the provisions of the Kerr-Mills Act. If our houses are in order on a state-by-state basis, and if we effectively enlist public support for our position, I am confident that we can continue to successfully resist the Washington power grab." □

Letter

July 20, 1962

J. Hoyle Carlock, M.D., President
Oklahoma State Medical Association
115 West Broadway
Ardmore, Oklahoma

Dear Doctor Carlock:

Please accept my sincere congratulations and appreciation for the fine work that you have done in our battle to keep medicine free of governmental controls. You are to be highly commended especially for your work with your Senators and for their fine support on last Tuesday. Likewise, I should like for you to express my appreciation to your officers, Councilors and members of the Association who have worked so long and diligently in our cause.

The action taken by the Senate was a great victory for those who believe in constitutional government and our free enterprise system.

With kindest personal regards,

Sincerely,

F. J. L. BLASINGAME, M.D.

FJLB:jd

We Resolve

What does the Oklahoma State Medical Association stand for?

A brief glance at some of the 24 resolutions passed by the 1962 House of Delegates reflects the thoughts and concern of the elected members of the policy-making body as they met in annual session:

- **Regarding President's Youth Fitness Program:** Resolved, that the Oklahoma State Medical Association pledges its full cooperation in establishing and maintaining a program of youth physical fitness, but emphasizes its opposition to federal intervention, control or attempt at standardizing "norms," "requirements," or otherwise implementing the program.

- **Regarding Relative Value Schedules:** Resolved, that the OSMA considers that the only proper and satisfactory fee arrangement in a free enterprise society is that reached by private contract between individual patient and physician, and that activities by "third parties" in the medical care field should be limited to developing contracts between themselves and potential patients.

- **Regarding Political Action Committees:** Resolved, that the OSMA officially recognize and endorse the American Medical Political Action Committee and its component, the Oklahoma Medical Political Action Committee, for their commendable programs of activities; and further, that the OSMA recommend to its members that they become active dues-paying members of the AMPAC and OMPAC.

- **Regarding Free Choice of Physician:** Resolved, that the OSMA affirm its support of the principle of free choice of physician by the patient; and, be it further resolved that the OSMA . . . continue its public information program to acquaint industry, government and the general public with the benefits provided by the effective application of the principle of free choice of physician.

- **Regarding Compulsory Retirement:** Resolved, that the OSMA formally express to industry, through an

educational campaign administered by an appropriate committee, its opposition to compulsory retirement of employees at an arbitrary age, urging the creation of a policy of considering retirement upon an individual basis with respect to the physical and mental condition of the employee and other factors.

• **Regarding Legislative Contact Program:** Resolved, that the OSMA . . . develop a group tour of association officers and influential members to Washington, D.C., at an appropriate time for purposes of meeting with federal legislators for business and social reasons . . . ; and, be it further resolved, that each component society of the OSMA be requested to arrange a similar meeting with its representatives and senators in the Oklahoma Legislature for the purpose of discussing pertinent state legislation.

• **Regarding Medical Examiners Law Financing:** Resolved, that the OSMA formally endorse and approve the Medical Examiners Law and directs that the State Legislative Committee cause to be introduced into the Oklahoma State Legislature a proposed law providing the necessary finances for implementation.

• **Regarding Seat Belts:** Resolved, that the OSMA go on record as favoring universal use of automobile safety belts; and, be it further resolved that physicians encourage their patients to install and use seat belts.

• **Regarding Licensure Renewal Fees:** Resolved, that . . . each such application (for licensure renewal) be accompanied by a renewal fee in an amount fixed by the State Board of Medical Examiners, provided said fee for annual renewal shall not exceed ten dollars.

• **Regarding Government Employment Services:** Resolved, that the OSMA go on record as opposing the interference of government employment services into the health care field.

• **Regarding National Blue Shield Plan for the Aged:** Resolved, that the OSMA does not approve the new National Blue Shield service plan policy, and recommends that its members not participate in the program, but instead urges that an indemnity type program be worked out.

• **Regarding King-Anderson Bill:** Resolved, that the OSMA approves the Bauer Statement (to "not be a willing party to implementing any system which we believe to be detrimental to the public welfare") and encourages its members in each county of the State of Oklahoma to help formulate and effectuate definite plans to oppose all legislation of the King-Anderson type.

• **Regarding Public Immunization:** Resolved, that the OSMA, in cooperation with interested health agencies, promote an effective public educational campaign considering the need for adequate immunization, this program to be of a continuing nature; that this program be developed in keeping with the principle of free choice of physician; and, that physicians be encouraged to provide immunization for those individuals for whom payment would be a hardship.□

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

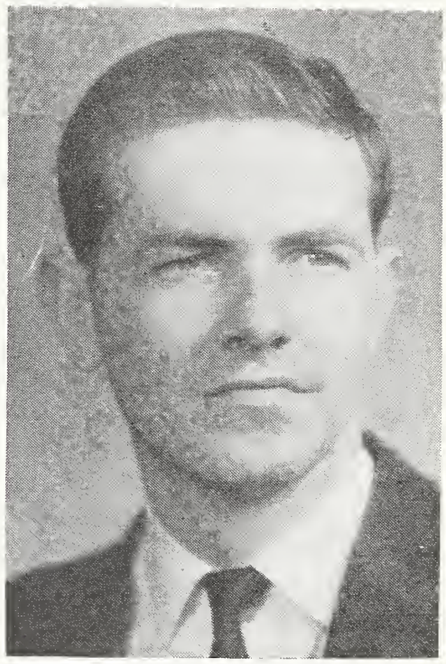
Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

Assistant Executive Secretary Hired



DWIGHT F. WHELAN

Mr. Dwight F. Whelan, 27-year-old Edmond resident, was named Assistant Executive Secretary of the Oklahoma State Medical Association on July 10th. He fills the position vacated by Mr. Don Blair, who was promoted to Executive Secretary last May following the resignation of R. H. Graham.

The selection of Mr. Whelan was made by an Employment Committee comprised of Peter E. Russo, M.D., Chairman; Mark R. Johnson, M.D.; and Malcom E. Phelps, M.D. There were ten applicants for the position.

The new OSMA executive is very well qualified for the position, although he is inexperienced in medical society work.

As state vce-president of the Junior Chamber of Commerce and as director and former president of the Edmond Chapter, he is experienced in the planning and conduct of organizational activities and public service projects. For example, he represented Oklahoma Jaycees at the National Community Development Seminar in Chicago last summer, and has been state chairman of several important committee activities of the organization.

While serving as state chairman

of the Onward Oklahoma Committee, he worked with the state legislature and was instrumental in obtaining adequate financing for the *Oklahoma Today* magazine.

His interest in the publication led to employment as Circulation and Promotion Director, a position he held at the time of his employment by the OSMA. Work experience with the magazine included the production of radio, television and newspaper copy, the preparation of brochures and leaflets, and many personal speaking appearances on behalf of the magazine. Under his direction, the paid circulation of *Oklahoma Today* was increased by thirty per cent in seven months' time.

Prior to his magazine-public relations experience, he was employed as a sales representative for a business machines manufacturer in Oklahoma City. With a sales territory encompassing the state capitol, he was not only commended for record-breaking sales effort, but also became personally acquainted with the heads of all state departments and most of the elected state legislators.

Mr. Whelan's college education (Business and Journalism) was received at Central State College, Edmond. He is married and has three children. □

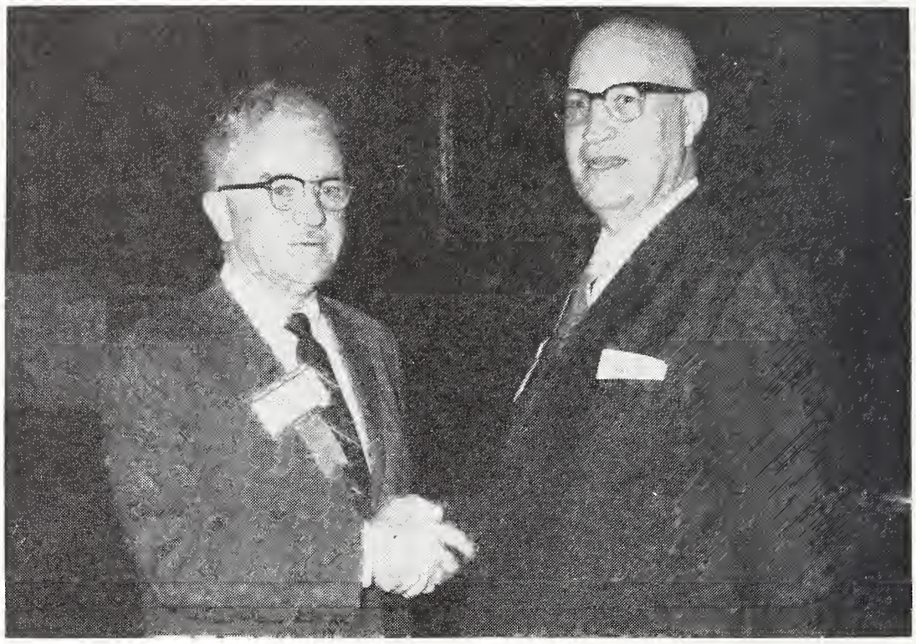
Pamphlets Available From OSMA Office

OSMA headquarters has extra quantities of waiting room literature which may be ordered without charge by physician members.

"The Cost of Medical Care" is an excellent graphic presentation of the favorable comparison of health care prices with the cost of living index. A breakdown of the health care dollar between the various services and products is also covered in this public relations piece.

Despite the defeat of King-Anderson type legislation for this session of Congress, the topic is still widely discussed and the problem is still current. "Health Care for the Aged" and "It's Your Decision" are useful AMA publications on this subject.

Phelps Steps Down As Aces and Deuces Leader



Malcom E. Phelps, M.D., El Reno, OSMA Delegate to the AMA, is shown congratulating H. Thomas McQuire, M.D. (left), AMA Delegate from Deleware, who succeeds him as President of Aces and Deuces, a fraternal organization comprised of states with only one or two delegates to the AMA. The inaugural ceremonies took place at the annual breakfast of the organization, held in Chicago on June 26th in connection with the annual meeting of the AMA.

OSHA Will Sponsor Continuing Education

"Continuing Education of the Physician in His Local Community" will be the subject of a conference sponsored by the Oklahoma State Heart Association to be held September 16, 1962 in the Center for Continuing Education in Norman.

Guest speakers for the meeting will be: John C. Leonard, M.D., Director of Medical Education, Hartford Hospital, Hartford, Connecticut; George J. Robertson, M.D., Chairman, Postgraduate Education Committee, Thayer Hospital, Waterville, Maine; Lawrence A. Fisher, M.D., Associate Director, Office of Research in Medical Education, University of Illinois College of Medicine, Chicago, Illinois and Richard E. Hurley, M.D., Medical Associate, American Heart Association, New York, New York.

Reservations should be sent to the Oklahoma State Heart Association, 825 Northeast 13th Street, Oklahoma City, before August 15, 1962. □

ADMISSION BY
PHYSICIAN ONLY

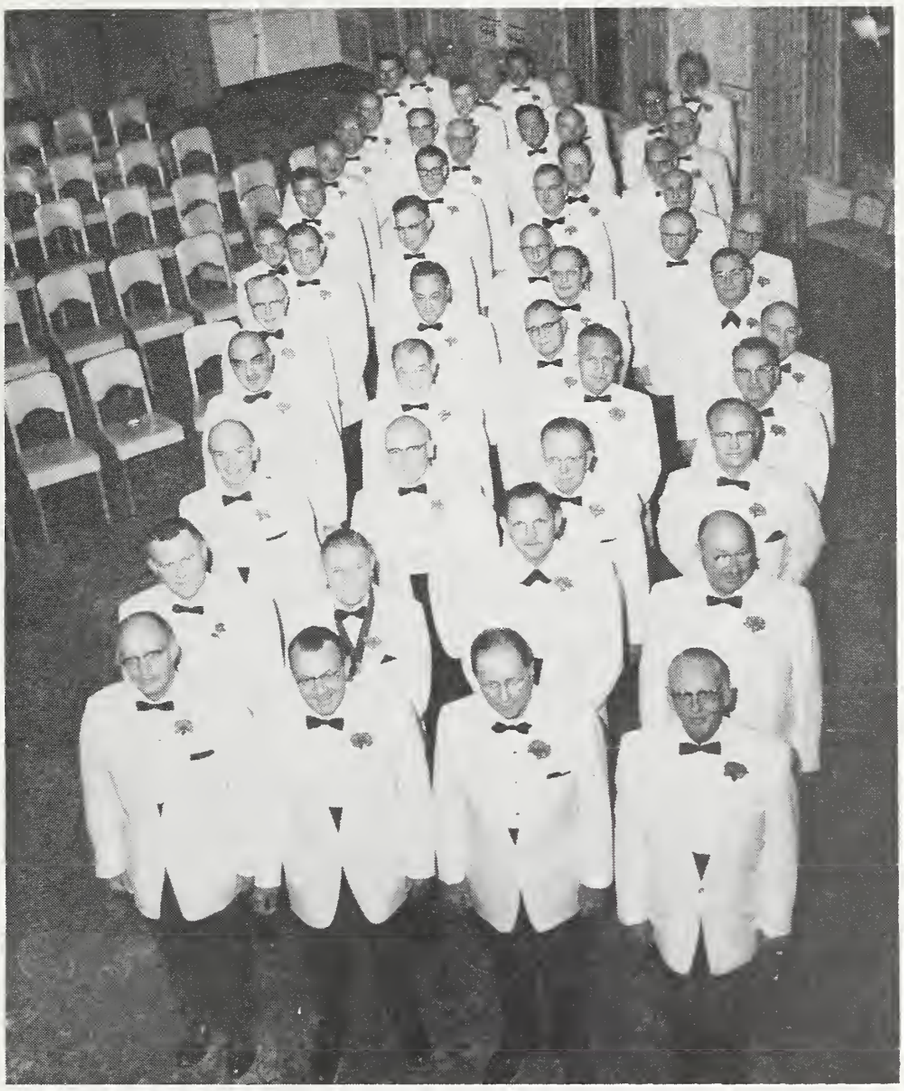
A Distinctive Atmosphere
in A Setting of Elegance

Irene's
NURSING
HOME

THE HALLMARK OF
EXCELLENCE IN CHRONIC
and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City
CE 2-8091 CE 2-7853

Presidents of State Societies



The presidents of state medical societies from the 50 states, the District of Columbia and Puerto Rico took part in the June 26th inaugural ceremony for George M. Fister, M.D., President of the American Medical Association. OSMA President, J. Hoyle Carlock, M.D., is pictured at the left of the third row.

Hill-Burton Report

The Hill-Burton Program in Oklahoma completed its 15th year of operation on June 30, 1962, Doctor Kirk T. Mosley, State Commissioner of Health, announced recently.

During this period, seventy-five State communities have received financial assistance through the State Department of Health, State Agency for the Federal-aid program.

A complete summary of the past 15 years reveals an impressive record of:

186 projects; 6763 beds
Total Cost, $83,141,184.84
Federal Share, $32,485,198.41
(slightly over 39% of the total cost)

According to Doctor Mosley, each successive year of the program has created a demand for methods of improving patient care through the construction of increasingly modern facilities. Also, there has been an increased interest in different types of facilities in which to provide a broader spectrum of patient care through the use of specialized facilities and services. Various communities, as well as the general hospitals, are seeking a clearer understanding on the need for total care health programs due to technological advances of medicine and changing patterns of care. An important factor in this interest is the realization that changing patterns in the social structure, economic conditions, population characteristics and trends also play an important role in planning for total health care.

"For these reasons," Doctor Mosley said, "the State Hospital Advisory Council, acting in an advisory capacity to the Hill-Burton State Agency, has recommended a plan that is specifically designed to promote community and regional planning by voluntary organized study groups. Experience records have definitely demonstrated that through sound, logical and cooperative Advance Planning, better facilities, the proper type of facilities, and better health services are provided in relation to need."

Eligibility for participation is limited to public and non-profit sponsors. The Minimum size general hospitals that can be considered, is 25 beds, which in turn, would require at least three duly licensed doctors in the community, adequate staffing and a service area population of about 10,000. Nursing home and chronic disease projects must be operated by, or in conection with, a general hospital in the community. □

OSMA JOURNAL / *death*

NEIL W. WOODWARD, M.D.
1898-1962

A resident of Oklahoma City since 1900, Neil W. Woodward, M.D., died June 16, 1962.

Doctor Woodward graduated from the University of Oklahoma School of Medicine in 1929 where he later served 25 years as part-time clinical professor of surgery, in addition to his private practice in proctology.

Active in many civic affairs, he had served as Chairman of the Oklahoma City Park Board from 1935-45.

Professional affiliations included his memberships in the International and American College of Surgeons, the Oklahoma City Surgical Society and the American Proctologic Society. □

Miscellaneous Advertisements

WELL EQUIPPED CLINIC, rent free, in Ringling, Oklahoma. X-ray machine for sale. Will either sell or loan other equipment, or will vacate the offices. Fine school and churches. Present physician leaving to take further training. Contact W. J. Moore, Moore Drug, Ringling, Oklahoma.

PRACTICE AVAILABLE on or before August 1, 1962. Will leave office fully equipped including 200 MA General Electric x-ray if desired. Reason for leaving—moving to Bartlesville. Contact Frank M. James, M.D., 119 South Price, Hominy, Oklahoma.

FOR SALE: General practice office, fully equipped. One partner taking further training, the other retiring. Contact Agnew A. Walker, M.D., Wewoka, Okla.

PHYSICIAN WANTED: Unopposed, prosperous territory, modern city of about 3,000. Quitting because of age and health. Well-equipped office. Good hospital nearby. May be paid off in small monthly payments. Contact J. S. Jacoby, M.D., Bank Building, Commerce, Oklahoma.

FOR RENT: one office and four treatment rooms. Share reception room and laboratory with urologist and pediatrician (one receptionist). Near Wesley, Mercy and St. Anthony Hospitals in Oklahoma City. Twelve doctors in building which was built in 1954. Contact C. L. Casebeer, M.D., 5700 N.W. Grand Blvd., Oklahoma City. Phone WI 6-6729.

LOST—American Optical Company Spencer binocular-type microscope, serial #418054. Contact Andrew Talley, Administrator, Grady Memorial Hospital, Chickasha, Oklahoma.

FOR SALE: General practice for one or two doctors in town of 2,800. Two man clinic grossing $70,000 per year, but could be much higher doing own surgery. Modern, air conditioned officers, x-ray, physical therapy. Eighteen bed community hospital with complete laboratory. One doctor is taking residency and other is taking position with Atomic Energy Commission. Will introduce over extended period. Contact W. A. Geiger, Jr., M.D., Fairfax, Oklahoma.

FOR SALE: Maico audiometer, four years old. Good condition, both air and bone conductor. Call or write: C. A. Pavy, M.D., 2132 East 25th Street, Tulsa, Oklahoma. RI 7-1165.

FOR SALE: Moline's Clinic in Lawton. Fully equipped, 1,500 square feet; 200 M.A. G.E. X-ray; laboratory equipment. Leaving as soon as possible. Terms. Lease or sub-lease. Contact Lester Moline, M.D., 2503 Sheridan Road, Lawton, Oklahoma. Call ELgin 3-4760.

PHYSICIAN wanted for established practice in Ralston, Pawnee County. Large agricultural area surrounds town of 1,000 population. Hospitals available in two nearby locations. Excellent school and churches, thirty-five miles from OSU. Contact Clara M. Powell, P.O. Box 112, Ralston, Oklahoma. Telephone REdwood 8-4289.

EXPERIENCED registered laboratory, X-ray technologist, nurse with experience in hospital administration. Available July 15. Phone LA 8-7932, 4150 Druid Lane, Apt. 8, Dallas, Texas.

ESTABLISHED GENERAL practice in Lawton with two associate to alternate on call. Completely furnished office if desired. Contact William A. Matthey, M.D., 807 Pershing Drive, Lawton, Oklahoma.

PHYSICIAN DOING general practice desires to dispose of equipment and practice. Practice is not for sale, but patients will be recommended to anyone buying the equipment. Wonderful opportunity to associate with two general practitioners and dentist in a beautiful clinic, large southwestern Oklahoma city. Contact Key A. Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

SURGEON, age 40, married, graduate of Geneva University, Geneva, Switzerland (1951), Board Certified, wishes to locate in Oklahoma, contact Mohamed S. Saydjari, M.D., 132 West Division, Barron, Wisconsin.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

FOR RENT: beautiful, air-conditioned, ground floor office, 631 N.W. 10th, Oklahoma City. Off-street parking, complete equipment optional. Contact Mrs. Neil Woodward, 4301 North Lincoln, Oklahoma City. JA 5-7028.

FOR LEASE: Air conditioned space in new section of shopping center—N.E. corner Britton Road and May Avenue. 900 to 3600 square feet, arranged to suit tenant. Reasonable rent. Contact O. Alton Watson, M.D., 1200 North Walker. CE 5-5496.

HOUSE STAFF PHYSICIAN Wanted: St. Francis Hospital, Tulsa, desires physician to work half-days 4 days per week, round-the-clock on 5th day. Salary $8-900 per month. Contact W. D. Hoover, M.D., Pan American Building, Tulsa.

Kudos to Kerr from each Auxiliary member! It seems fitting that as many letters and telegrams of congratulations expressing our gratitude should be sent following the defeat of Medicare as were sent during the period of apprehension.

Our gratitude must be accompanied by the full recognition and the impact of the threat for the future. It would be so easy to relax and hope for the best; unfortunately, this would be completely unrealistic, the quickest way to chaos. County Presidents and Legislative Chairmen: be grateful, but tighten your program gaps, double your community projects, and cultivate better public relations. The merry-go-round will start faster —and with no calliope—the next time.

National Convention kept our State President, Mrs. Milton L. Berg, and our delegates completely absorbed. Excerpts from Sue's letter follow: "National Convention was terrific. I wish every member could have attended. Sunday, June 24, was AMPAC Day; and we attended the AMPAC banquet, held in the Grand Ballroom of the Palmer House. What a thrill to walk into this huge room, filled to the brim with men and women that included leaders of American medicine and distinguished guests from the worlds of politics, business, and industry. Senator John G. Tower (R., Texas) and Representative Harold B. McSween (D., Louisiana) spoke without reservation on the importance of the American Medical Political Action Committee and its continued existence if we are to continue to practice free medicine within a free enterprise system."

This calls for our monthly *Bulletin* plug: remember, sending your subscription, new or renewed, insures your receiving the September issue, which will cover every important speech and procedure during the convention.

"At our Auxiliary meetings we were priviledged to hear Doctor Edward R. Annis (note: now President-Elect) on the King-Anderson Bill, and Doctor Theodore R. Van Dellen, whose subject was 'Guarding Your Husband's Health.' Another exciting experience was seeing Zellie Forester (Mrs. Virgil Ray) installed as a National Director for a two-year term; we are extremely proud to have her represent our State Auxiliary in this capacity. We were happy to present Maxine Fite's (Mrs. Pat, Sr.) excellent report for the past year; and we appreciated the kind response to the Memorial Service.

"Enough cannot be said about our faithful delegates who took mountains of notes and made me feel both humble and proud to represent our Oklahoma Auxiliary."

Plans for a busy, energetic year ahead are well under way. One Auxiliary has already laid the groundwork for an extremely important Community Service project: doctors' families are "adopting" doctors, technicians, and nurses from foreign countries for the year.

When the words "busy and energetic" are used to describe Auxiliary projects, we are reminded of physicians' wives who are personally too busy for participation in Auxiliary projects. Counterbalancing this attitude are two examples, one remembered from a report years ago, one quite recently. At an annual meeting in Tulsa years ago, Mrs. George Garrison spoke to us. Anne mentioned some one's returning a report with a note attached: "Sorry I am a bit late with my report, but we have had three simultaneous cases of measles in the family." During our recent state convention, a County President singled out a member who had done commendable work on a project. She hesitated, then added: "I mention her name particularly, because she is the mother of nine." So—you are busy, every one is busy—but time can be found in our busy lives; and oportunities for needed community service are all about us.

OSMA JOURNAL / *the last word*

On the same day of Senator Kerr's defeat of the Administration's social security health care plan, his argument favoring the use of the Kerr-Mills Bill to finance health care for the aged was further bolstered by the Oklahoma Public Welfare Commission's announcement that the state's Kerr-Mills program was being liberalized: Income eligibility limits were raised from $1,500 to $1,800 a year for single persons, and from $2,000 to $2,300 a year for married couples.

Steve Stahl, Executive Vice-President of the Oklahoma Public Expenditures Council, announced on July 6th the formation of the Investor's Union of America, Inc. Mr. Stahl said the principal objective of the group is "to secure a fair and reasonable return on the money invested by more than 17 million Americans in the tools of production . . . These are the people who have been hurt the most by the present stock market decline resulting from government's unfriendly attitude toward business and free market economy."

The Texas County Medical Society has sponsored and financed a county-wide oral polio immunization program. Type I Sabin vaccine was given to the general public on July 14th, and Types III and II will be made available on August 25th and October 6th, respectively. About 6,500 persons turned out the first day of the program, with the encouragement of local news media. OSMA's Council on Public Health will meet August 19 to discuss possible organization of statewide drive against polio.

Tulsan wins Murdock Award. William Orlando Smith, Jr., M.D., Tulsa won the University of Kansas Medical Center's $500 Murdock Award given to the outstanding resident during 1961-62. The senior resident in neurosurgery broke precedent by becoming the first specialty resident to receive the honor. Doctor Smith, son of W. O. Smith, M.D., Tulsa, is a 1957 graduate of the University of Oklahoma School of Medicine.

The defeated Anderson-Javits amendment for social security health care is expected to be the basic proposal to be introduced into Congress next year. On July 25th, following the defeat of the amendment in the Senate, Senator Clinton P. Anderson (D., N.M.) introduced Senate Bill 3565 for the purpose of laying the groundwork for next year's proposal.

Tune from H.E.W. . . . When Abraham Ribicoff was given a farewell party by the Department of Health, Education and Welfare, the staff sang a song which is most indicative of the attitude of Washington bureaucrats toward the social security health bill:

"We have health insurance **hand-outs**
If you're over sixty-five
The benefits are standouts
If you can just stay alive
The Senate's going to pass it
'Cause we added lots of frills
Who'll sit on it then?
Wilbur Mills!"

The American Medical Association's Committee on Disaster Medical Care recently announced the committee appointment of William H. Reiff, M.D., Oklahoma City internist. Doctor Reiff is former chairman of the OSMA's committee of the same subject.

OSMA Annual Meetings are increasingly hard to finance: Exhibitors are curtailing their promotion budgets and some are dishonoring their agreements to exhibit (at the 1962 meeting, National Cash Register and Rhinopto cancelled out a few days before the meeting). As refreshing as their product, however, **7-Up Bottlers of Oklahoma** forgot to install their exhibit but insisted on paying for their contracted space.

MEETINGS

September 9	Annual Meeting—Red River Valley Section, Oklahoma AAGP — Lake Texhoma Lodge
September 15	Oklahoma Chapter, American College of Surgeons, Sequoyah State Park
October 29-31	Oklahoma City Clinical Society, Sheraton - Oklahoma Hotel.

.....a memo from and

published by Oklahoma Blue Cross - Blue Shield, here's...

AUGUST 1962

COMMUNICATIONS

The problem of communication between nations, organizations and even individual people is not a new one. The ability to communicate clearly and fully among human beings is an elusive virtue. The lack of it has caused divorces, law suits, strikes and even world-wide wars. Even though the vehicles for our communication have multiplied greatly since pre-historic man first grunted or chiseled on stone, we still misunderstand each other. Now that we can bounce pictures and voices to and from Europe off an orbiting satellite, we have still another way to misunderstand and be misunderstood.

What's all this got to do with us? Well, it's an acknowledgement of the risk in communicating to the medical profession through the medium of the written word (i.e. this and past inserts, letters, pamphlets etc.). However, even with the risk acknowledged, we still welcomed the opportunity to inform you of our finances, statistical medical trends, changes and problems.

Prepayment is an exacting function in medical economics. It is highly actuarial; therefore statistics are important. We've published some significant statistics in past inserts. We kept them to a merciful minimum, but we hope the ones we used captured your interest.

The current outlook for the voluntary prepayment system that has been a bulwark against governmental pressures is not bright. That, in our opinion, made the illumination of the voluntary system's strengths and weaknesses all the more important during this crucial year. We sincerely hope that our efforts to inform the profession through this medium have been easily read and received in the manner they were intended.

By far, the best mode of communication is personal (eyeball-to-eyeball) contact, and we know it. To that end, our Professional Relations staff has been doubled. You will be getting more personal visits from that department in the future. Our Member Council program is available to you twice a year in your own county. Your letters, inquiries, and suggestions to us are not only welcome but very helpful to the staff and trustees. We invite them.

This is the last of six inserts in the Journal from us. With the remaining space, we want to express our appreciation to the Editors and Don Blair for this excellent opportunity to reach the readership of a prize-winning Journal. You might say we "hitch-hiked" on a thoroughbred this past year. It was our pleasure and honor. We appreciate it.

(a supplement to the Journal of the Oklahoma State Medical Association)

The JOURNAL of the Oklahoma State Medical Association

SEPTEMBER 1962
Vol. 55/No. 9

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
JAMES F. HAMMARSTEN, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

The Edge of Indigence 353
President's Page 354

scientific

Surgical Treatment of Several Diseases of the Thyroid, *Claude C. Craighead, M.D.* 355
Cervical Angiography, *Haven Mankin, M.D.* 360
The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program, *Robert D. Lindeman, M.D., Claude M. Bloss, M.D., Forest R. Brown, M.D. and Kirk T. Moseley, M.D.* 365
Heart Page, *C. Robert Cooke, M.D.* 376

medical center

Dean's Message 377
Cholesterol Pleural Effusion, *Frederick D. Mannerberg, M.D., Edward N. Brandt, Jr., M.D. and M. B. Shook, M.D.* 378
A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries, *Harrison Hayes, M.D., Monty Rothenberger, M.D., John L. Boland, Ph.D. and E. M. George, M.A., M.D.* 384
Abstracts 390
Faculty News 392

news

Five O.U. Freshmen Receive OSMA Scholarship Awards 394
New Loan Fund Created For Medical Students 395
Three Group Insurance Plans for OSMA Members . . 396
Mass Sabin Polio Drives Urged in Fall 396
Programs Offered on Perinatal Mortality 397
American College of Surgeons to Convene in Phoenix . 397
Doctor Hart Conducts Attitude Survey 398
County Officer's Conference Planned 398
State Represented at AMA Institute 398
Book Reviews 399
Pamphlets Available From OSMA Office 399
Miscellaneous Advertisements 400
Index to Advertisers lii
Auxiliary liii
The Last Word liv

asthma attack averted
. . . in minutes

patient protected
. . . for hours

Nephenalin®

(the dual-action anti-asthmatic tablet)

. . . works with nebulizer speed—provides four-hour protection

One NEPHENALIN tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.
Dosage: Hold one NEPHENALIN tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.
Supplied: Bottles of 50 tablets. For children: NEPHENALIN Pediatric, bottles of 50 tablets.
Caution: Do not administer NEPHENALIN with epinephrine. The two medications may be alternated at 4-hour intervals. NEPHENALIN should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. THOS. LEEMING & CO., INC., New York 17, N.Y.

The Edge of Indigence

ADEQUATE food, clothing, shelter, education and medical care are considered essentials of life in the United States. Everyone agrees on these fundamentals but there is considerably less agreement on *what* is adequate, *when* aid is needed and *how* it should be given.

Between poverty and solvency there is a broad, gray economic band where thrift in adversity often means independence while irresponsibility means indigence.

Remember the story about the ant and the grasshopper? The ant worked all summer while the grasshopper lived it up. When winter came the grasshopper froze in the snow but the ant survived in his home built and stocked during the good days.

Obviously Congress cannot buy thrift for their constituents nor legislate responsibility among their fellows but it is possible to stifle initiative and ambition by subsidizing laziness. Outside the Soviet Union little study has been given this demoralizing aspect of federal charity especially as it may affect the younger generation.

It is an American tradition, a Christian heritage, that we cannot let anyone starve even when that starvation results entirely from a simple reluctance to work. Perhaps some folks might harden themselves to ignoring flagrant examples of laziness but no one can stand by while the idler's children starve. The tragedy is that these "dependent" children learn by example how useless it is to put forth an effort to work.

Should hard working, thrifty people be penalized to pay for their fellows' improvidence? Where do basic necessities end and luxuries begin? Should a man do without television to pay for his medical care? Should he give up cigarettes and water skiis to buy clothes for his children? Should he forego new furniture to provide food for his family?

These are only a few of the problems which must be faced by people in the borderline economic classes. When their neighbors who do not work are cared for by a benevolent government there is a great temptation to follow these "successful" examples. If a man's wants are not great why should he put forth an effort to work after the twenty year old fires have burned down? Thus it is that indigence breeds indigence in an ever widening circle. As the indigent list grows the importance of this group as a voting bloc increases and there is a tendency to increase "benefits."

"The United States is doing everything that money can buy," said a U. S. Congressman recently. The importance of this philosophy cannot be over-emphasized as it applies to the management of indigence in America. Unfortunately men are not born equal in their capacity for work or in mental ability but nearly everyone is an expert in taking advantage of a good thing when he sees it.

This country was founded and grew strong through the individual efforts of sturdy pioneers who depended on themselves primarily and through unity with others of the same attitude they produced a vigorous democracy. They realized that economic disaster could happen to anyone and they were generous in their help to their unfortunate neighbors. Now, however, federal charity has grown into a sort of major industry. It is losing its personal character and being replaced by voluminous rules, forms and directives; aid to the indigent is in the process of becoming an impersonal function. The recipients of aid sometimes take it as a kind of birthright, an opportunity which they receive automatically with citizenship.

The emphasis must be reversed, as an American President once put it: "Ask not what your country can do for you, rather ask what you can do for your country."—*C.B.D.* □

The Oklahoma State Medical Association's Financial Aid to Education Program is officially underway with the presentation of the first five scholarship checks on September 6th. Academic achievement is emphasized and rewarded by the scholarships, and needy students are also remembered by the loan and grant-in-aid provisions of the well-rounded assistance program.

Details of the OSMA's program are covered in the article on page 394. Read the article and I believe you will agree that the $5 per member dues increase requested by the 1961 House of Delegates has been put to good use. Through this small contribution from each of us we are able to offer the O.U. students a collective contribution of nearly $8,500 a year.

Plaudits are in order: To R. R. Hannas, M.D., and his Council on Professional Education which conceived the program; to the House of Delegates which approved it; to Walter E. Brown, M.D., and the Financial Aid to Education Committee which worked out the myriad details; to the O.U. Medical Center which has volunteered to manage the administrative burden; and, last but not least, to the physicians of Oklahoma who have generously contributed to its support.

Keeping medicine free is our responsibility. But medical education is not *free,* and our program is essential if we are to maintain the necessary quality and quantity of medical school graduates in times of rising costs and increasing competition from other educational disciplines.

We have met a problem with a positive program—and we are keeping faith with our heritage.

J. Hoyle Carlock, M.D.

OSMA JOURNAL / scientific

Surgical Treatment of Several Diseases of the Thyroid*

CLAUDE C. CRAIGHEAD, M.D.

After undergoing almost a century of widespread use, thyroidectomy is still on trial. Despite lessening approval in certain states, it affords effective therapy with few side effects for many thyroid diseases.

A REVIEW of the records of 346 patients with the diagnosis of thyroid disease admitted to Charity Hospital of Louisiana at New Orleans during the year 1959 showed that 68 per cent were Negroes, and 32 per cent, Caucasians, corresponding closely to the racial distribution of all admissions to the hospital during the same period. The disease occurred predominantly in women, 89 per cent. It was more common from 31 to 50 years of age, and slightly less so from 21 to 30 and 51 to 70. It was detected in about one per cent of individuals under 11 years of age, in four per cent from 11 to 20, and seven per cent above 70.

Of the 346 patients, some type of thyroidectomy was performed on 175. The most common diagnosis was nodular nontoxic goiter, occurring in 115. No histologic diagnosis was ascertained in five. The chief lesion was thyroiditis in seven.

Diagnosis of adenoma was made from 14 pathologic specimens, the follicular type occurring in eight instances, colloid in three, Hürthle cell in one, fetal in one, and papillary cystadenoma in one. Diagnosis of carcinoma was made from 11, the papillary component predominating in four, the follicular in four, the combined papillary and follicular in two, and the anaplastic in one.

During the period when 15 patients were undergoing thyroidectomy for diffuse toxic goiter, 25 were being treated with radioactive iodine, four of whom required a second and one, a third dose. The mean average of the first dose was 7.5 MC RAI and of the total dose, 10 MC RAI. While eight were undergoing surgery for nodular toxic goiter, ten were being treated with radioactive iodine. Two required a second dose. The mean average of the first dose was 8.5 MC RAI and of the total dose, 10 MC RAI.

MORBIDITY OF THYROIDECTOMY

The introduction in recent years of antithyroid drugs and radioactive iodine in the treatment of thyrotoxicosis has made the surgeon pause to re-evaluate the risks of thyroidectomy.

Morbid factors are lessened if adequate exposure is obtained by dividing the pretracheal muscles, the recurrent laryngeal nerves are visualized throughout their course, and any tissue resembling para-

*Presented at the 56th Annual Meeting of the Oklahoma State Medical Association, May 5-7, 1962.
From the Department of Surgery, Louisiana State University School of Medicine and Browne-McHardy Clinic, New Orleans, Louisiana.

thyroid gland in the operative field is preserved.

No deaths were encountered in 175 thyroidectomies. One patient developed respiratory obstruction severe enough to require temporary tracheostomy. One patient developed a unilateral Horner's syndrome.

Small hematomata developed in the wounds of two patients. Undermining of skin flaps at thyroidectomy predisposes to collections of blood and serum. If the incision is made directly over the upper aspect of the thyroid and the pretracheal muscles are divided, extensive undermining of skin is unnecessary.

Infection with formation of pus developed in the wounds of three patients. Slight inflammatory changes in the edges of the wounds were not included.

While postoperative laryngoscopy was not carried out as a routine procedure, the cords were visualized in most instances as a part of follow-up. Permanent loss of function was observed as a unilateral phenomenon in two patients.

Transient hypoparathyroidism occurred in six patients, all symptoms gradually disappearing and serum calcium returning to a normal level less than a year after operation. Permanent hypoparathyroidism of moderate severity was observed in one patient.

The overall incidence of hypothyroidism in this series was 11 cases in 175 thyroidectomies. It is possible that further cases of hypothyroidism will come to light in the future.

ENLARGEMENT OF THYROID REMNANT AFTER THYROIDECTOMY

After resection of a portion of the thyroid, the remainder hypertrophies and the resultant enlargement is a matter of concern to the patient and physician alike. Response of the gland is proportional to the amount of thyroid removed and to any underlying disease in the remainder which may further interfere with epithelial activity.

Epithelial tissue, the basic element in reflecting thyroid function, is affected principally. Both nuclei and cytoplasm of cells of the follicles increase in size. Follicles decrease in diameter and the store of colloid diminishes. The gland becomes more vascular.

Subtotal thyroidectomy is followed by mitotic proliferation of epithelial cells and formation of new follicles. Similarly, administration of thyroid-stimulating hormone (TSH) produces in the intact gland the same result.

Administration of thyroxin which suppresses secretion of TSH prevents compensatory hypertrophy in the thyroid. Hypophysectomy which removes the source of TSH also prevents hypertrophy.

After partial thyroidectomy, the remnant usually discharges an increased amount of thyroxin to maintain normal or near normal metabolism. An increase in turnover of iodine and reduction of colloid store results from compensatory hypertrophy induced by TSH.

Rats on thiourea or a diet of rape seed develop multiple adenomata which metastasize to lung. The adenomata occur in the face of an excess of TSH and are presumably due to relative thyroxin deficiency. The tumors can be successfully grafted if prior radical thyroidectomy has been done on the recipients. In contrast, an excess of thyroxin is rarely associated with the development of neoplasia.

Claude C. Craighead, M.D., graduated from Louisiana State University School of Medicine where he is now Clinical Associate Professor of Surgery. He is certified by the American Board of Surgery.

Fellowships in the American College of Surgeons, the American College of Chest Physicians, the Southeastern Surgical Congress, membership in the Southern Surgical Association, the Surgical Association of Louisiana and the Southern Thoracic Surgical Association are among the professional organizations with which Doctor Craighead is affiliated. In addition, he is second Vice-President of the Surgical Association of Louisiana.

Experiments in animals do not necessarily mirror the conditions in man. However, if a similarity exists, increased epithelial activity can be followed by benign and malignant neoplasia. Epithelial hyperplasia is a frequent precursor of malignancy. It is often difficult to distinguish histologically between compensatory epithelial hyperplasia and neoplasia.

Clinical application—Frequently after a limited resection of the thyroid, as for example, a benign nodule, in which the remainder of the gland is presumably normal, the patient presents with enlargement of the remnant. The parameters to register thyroid function may be normal.

In these cases with enlargement, evidence of local hypertrophy in the face of a eumetabolic state as determined by registrable indices indicates that the body has compensated by producing an excess of TSH.

Since a hypometabolic state represents an advanced stage of decompensation by the thyro-pituitary axis, administration of exogenous thyroid hormone should be governed by the clinical examination of the thyroid, rather than depending on the laboratory aids which reflect only gross alterations of function.

It would appear to be desirable, from the experience gained in clinical observations on man and in experimentation on animals, to maintain a high level of circulating thyroxin and a low level of TSH. It would appear to be almost mandatory to do so in patients having undergone thyroidectomy since some prior alteration of cellular activity, even though it may be focal, is implicit in that a part of the thyroid has required removal. To maintain a depressed level of TSH, thyroid hormone should be given to patients following surgery on the thyroid, even in those having limited resections, in order to prevent enlargement of the remnant. The dosage of thyroid extract should be determined by local status of the thyroid remnant.

OPERATIVE APPROACH TO STATIC THYROIDITIS

Thyroiditis is deemed on the increase, although the likelihood of its masquerading under another name in the past cannot be denied. Twenty-five of 175 patients (14 per cent) on whom thyroidectomy was performed had some stigmata of thyroiditis. In seven the predominant lesion was thyroiditis. In two, diffuse thyroiditis was a prominent feature but the more exigent lesion was carcinoma (figure 1).

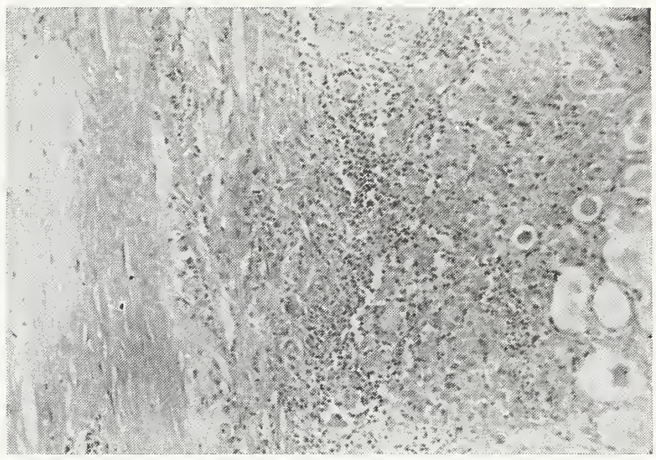


Figure 1. Photomicrograph showing low grade follicular carcinoma arising in an adenoma, the fibrous capsule of which is seen at the edge of the illustration.

The question is often posed as to the proper management of chronic thyroiditis, including Hashimoto's and Riedel's struma. If the diagnosis can be reasonably established on clinical and laboratory grounds, many physicians believe that operation is not indicated. The fallacy in this argument is that nodularity or bosselation of the thyroid is a common feature in chronic thyroiditis which makes its clinical differentiation from adenomatous goiter difficult and at times impossible. Recently developed examinations in the laboratory for the detection of antibodies in patients with thyroiditis are not specific enough to solve the dilemma beyond argument.

Some surgeons, therefore, resort to random sampling of the gland, either with a needle or limited open biopsy. If the diagnosis thereby ascertained is thyroiditis, nothing further is done.

Some surgeons resect the isthmus with the thought that this maneuver will relieve symptoms of pressure. Their thinking is that with interference of thyroid function, all possible residue should be retained. The added risks of injury to recurrent laryngeal nerves and parathyroid glands are avoided.

These conservative approaches to this disease leave much to be desired. The cos-

metic appearance of the scar may be preferable to that of the thyroid enlargement. Isthmusectomy is very likely to be only temporarily successful in relieving pressure as the remnant expands and re-encircles the trachea. The process continues to smolder, producing pain and discomfort in the neck.

Carcinoma can exist in one part of the gland and be overlooked unless subtotal thyroidectomy is performed.

A rational approach is to remove one lobe completely and the other partially, leaving a remnant of posterior capsule on the side of the partial excision to insure adequate function of the parathyroids and preservation of the recurrent laryngeal nerves.

Some degree of hypothyroidism is to be anticipated in all patients with chronic thyroiditis and therapeutic replacement in the form of thyroid extract is an integral part of their management, irrespective of the amount, if any, of thyroid removed. The thesis, then, that radical thyroidectomy unduely complicates the problem is hardly tenable when it is considered that supplemental exogenous thyroid hormone forms the sheet anchor on which control of the systemic effects of the disease is predicated, even in those patients who do not undergo excision of the thyroid.

PREGNANCY AND THYROTOXICOSIS

The story that follows is fairly typical:

A 32-year-old Negro woman in the third month of pregnancy was seen June 1958 with a history of loss of 40 pounds of weight, other symptoms and signs of Graves' disease, and a radioactive iodine uptake of 57 per cent. She was started on Tapazole.® On becoming euthyroid, she missed her appointment and came in at the end of seven months. At this stage she was placed on thyroid extract and reserpine in addition to Tapazole.® The baby, born prematurely, weighed two and one-half pounds and died two days later.

In the first trimester symptoms are often ascribed to physiologic changes. Therefore, thyrotoxicosis, difficult to assess with the usual parameters during this period, goes undetected until the second, or more rarely, the third trimester.

Even if the diagnosis is established early, the thyrotoxic patient characteristically is desultory in following a regimen unless it is carefully supervised. At the end of the second trimester the thyrotoxicosis may still be rampant. In general, if not under control at this time, it will not improve significantly until the thirty-second week or more, and then, spontaneously.

Of 14 patients with thyrotoxicosis, only one came to operation during pregnancy. In addition to these 14 patients with thyrotoxicosis, four were diagnosed clinically as nodular nontoxic goiter, and two as thyroiditis, none of whom were operated. From the practical standpoint, then, operation was usually deferred until after delivery.

Ideally, if the toxicity is not marked, the patient can be prepared rapidly with iodine. If it is more obdurate, she must be prepared with antithyroid drugs. Since time is of the essence, rigid supervision is mandatory. That operation is executed optimally during the second trimester does not preclude its limited use during the third trimester.

The rationale of therapy for thyrotoxicosis associated with pregnancy is predicated on maintaining the patient in a euthyroid state. One grave danger lies in allowing the patient, whether treated with surgery or antithyroid drugs, to drop to hypothyroid level, thereby resulting in goiter in the fetus. The goiter may be so large in the newborn as to cause death from respiratory obstruction. Thyroid extract must be given to the mother to insure a euthyroid state, and was a routine procedure in these 14 patients. Aside from the one fetal death mentioned previously, another was a still-birth. Twelve babies survived.

The method by which treatment is accomplished is less important, although surgery, because of its definitiveness and reportedly lower fetal mortality, is preferred. Many patients on antithyroid drugs discontinue their medications. The thiourea derivatives cross the placental barrier and are goitrogenic to the fetus. Radioactive iodine, because of its danger to the mother and more particularly to the fetus, is contraindicated.

Antihypertensive drugs such as reserpine and others, although they mask the symptoms of hyperthyroidism, are often considered advisable during the last few weeks of pregnancy in order to effect normal blood pressure in these patients who are ideal candidates for eclampsia.

With the many drugs that the postpartal patient has to take to overcome thyroidal dysfunction and which are found in considerable quantity in her milk, the baby should not be fed from the breast.

SUMMARY

Of 346 patients with thyroid disease included in this study from Charity Hospital of Louisiana at New Orleans, 175 came to operation. The incidence of carcinoma in all thyroidectomies was six per cent. During the period when 23 patients were operated for toxic goiter, 35 were given radioactive iodine.

Thyroidectomy can be performed with minimal morbidity. To prevent hypertrophy of the remnant postoperatively frequently requires exogenous thyroid hormone.

Despite a high incidence, the fear of inducing thyroid deficiency should not influence extent of resection in cases of chronic thyroiditis. Many times indicated in the nonoperated cases as a result of the underlying disease which interferes with normal function, replacement therapy is a small price to pay for alleviation of symptoms.

That the patient must be maintained in a euthyroid state is essential in treating thyrotoxicosis associated with pregnancy, whether surgery, the preferred method, or antithyroid drugs are used. □

Browne-McHardy Clinic
3636 St. Charles Avenue, New Orleans 15, Louisiana

NO MORE PROOF NEEDED OF SMOKING-CANCER LINK

The collection of further scientific data linking cigarette smoking and lung cancer is not needed, according to Doctor Howard C. Taylor, New York City.

Studies already completed are adequate and are available for re-evaluation if that is needed, Doctor Taylor said in the current (Sept. 1) *Journal of the American Medical Association.* The AMA recently announced it would impartially investigate the controversial matter.

"The evidence . . . is far more precise, in fact, than that which has been accepted by physicians as adequate to take action against the causes of other plagues," he said.

"There is the known presence in cigarette smoke of carcinogenic substances, the production of skin cancer in laboratory animals by smoke condensates, the predilection of precancerous lesions for the lungs of heavy smokers, and the numerous epidemiological and statistical studies showing a consistent parallelism between the number of cigarettes habitually smoked and the chance of developing lung cancer."

Nevertheless, he said, "the individual smoker does not relate the hazard to himself, either because the extent of the risk is not comprehended or the day of reckoning seems too remote."

Stressing the magnitude of the problem, Doctor Taylor said authorities estimate that 75 to 90 per cent of the 40,000 annual lung cancer deaths may be attributed to the smoking habit. These 30,000 to 36,000 deaths are approximately equal to the annual motor vehicle traffic death toll about which "so much justifiable horror" is expressed, he said.

Doctor Taylor said there is evidence that cigarette smoking has declined substantially among physicians over the past several years. He urged more physicians to examine the facts and act in accordance with their implication.

The author is affiliated with the department of obstetrics and gynecology, College of Physicians and Surgeons of Columbia University. □

Cervical Angiography*

HAVEN MANKIN, M.D.

Many "incipient stroke" patients will have lesions in the great vessels of the neck which are amenable to surgery if detected by this diagnostic method.

IN 1905, Chiari first described the syndrome of stenosis and occlusion in the region of the carotid sinus as the result of atheromatous plaques. Then, in 1937, Egas Moniz presented four cases of occlusion of the carotid artery in the cervical area, having made the first antemortem diagnosis by means of cerebral angiography.

However, as late as 1951 there were only 17 clinical cases of this type in the American literature and 84 in the European. The last ten years has shown a gradual awakening to the fact that a large percentage of cerebral vascular "accidents" occur because of stenosis or occlusion of one or more of the four major vessels of the neck rather than the usually incriminated cerebral vessels. Anatomical findings of Fisher at McGill University in 1952 helped spread much of this information. He also pointed once again to Bernoullis' theorum, which states that flow through a tube varies as the fourth power of the radius, in explaining the marked ischemia often found in connection with stenosis of a vessel.

Ability to diagnose the involved vessels and increasingly successful surgical techniques should therefore present considerable hope for the patient. This is true to a certain extent but largely depends upon an alert family physician who can select the proper candidates.

It has ben found by those at the Mayo Clinic and others that surgical results are most gratifying when applied to the incipient or progressive stroke patient, rather than those who already have a completed stroke.

Figure 1. Position of patient for first injection made into the right innominate artery.

*Patient material and brachial artery catheterization performed by Doctors John J. Donnell and Gerald Honick, at the Mercy Hospital Heart and Blood Vessel Center, Oklahoma City, Oklahoma.

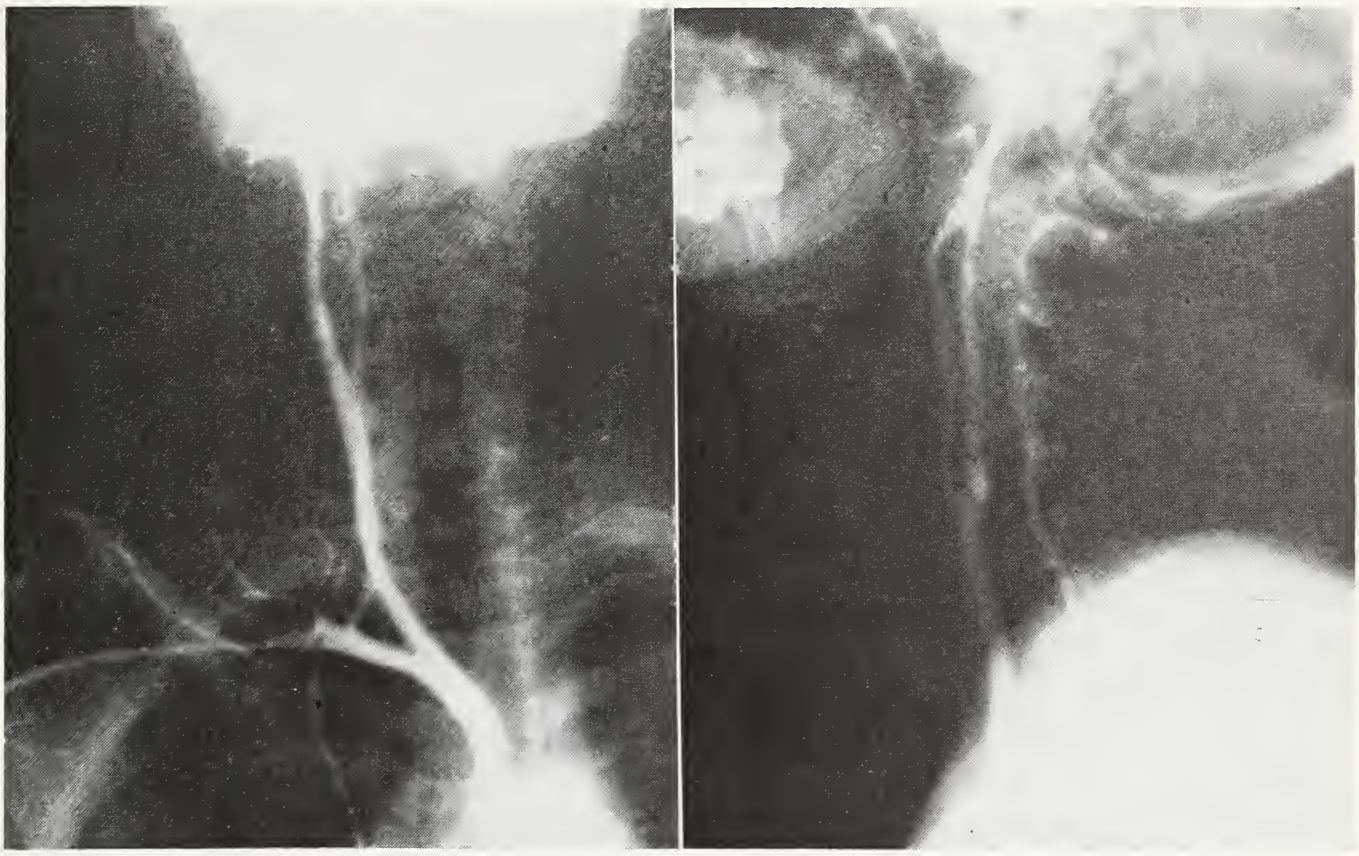


Figure 2. Note catheter tip in right innominate artery. Normal right carotid arteries and vertebral artery.

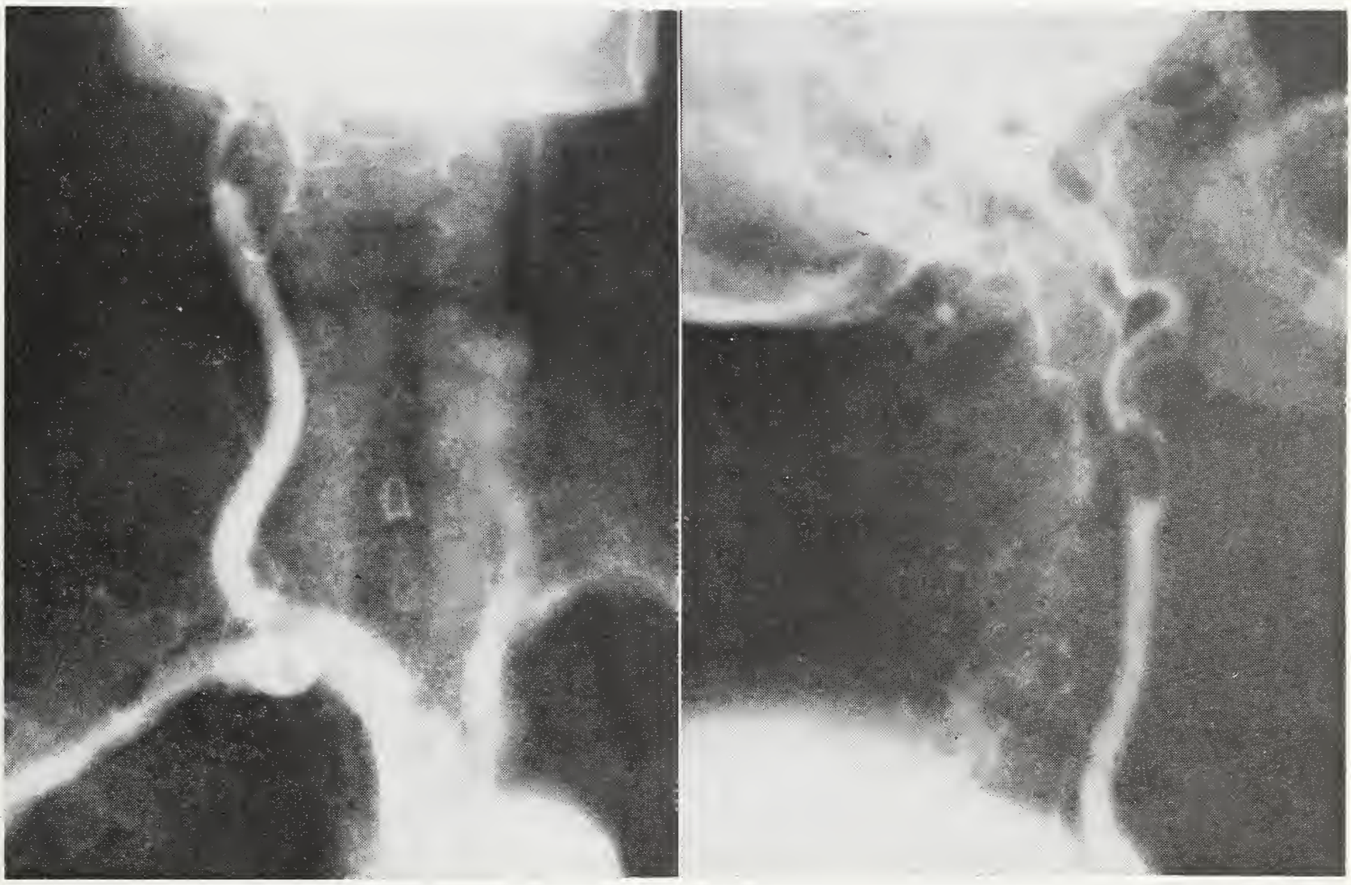


Figure 3. Injection into right innominate artery with good demonstration of obstruction of the right internal artery, a small right vertebral and sclerotic changes in the subclavian artery.

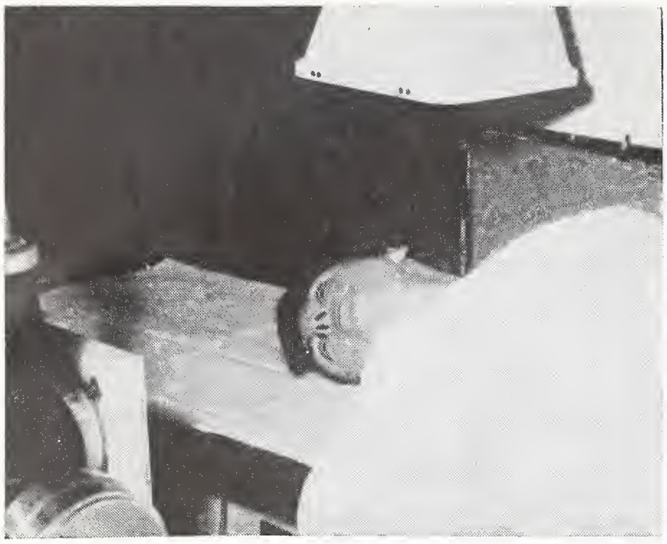


Figure 4. Patient position for second injection which is made into the arch of the aorta. Note Schoenander biplane unit in readiness.

The incipient stroke patient is one who suffers brief intermittent focal cerebral symptoms with normal intervals between attacks. The progressive stroke begins with a focal cerebral attack and gradually worsens in a period of hours or days. In addition to focal cerebral attacks there is often a bruit heard over the involved neck vessel, decreased pressure in one or both retinal arteries and decreased blood pressure in one or both arms. These two groups will often respond very well to surgery since the vascular findings in the neck will be stenosis of a vessel or a partially occluding atheromatous plaque. A clear cut clinical picture does not preclude the need for angiography as multiple lesions are often found.

The completed stroke patient who is not ordinarily improved by surgery will usually demonstrate an occluded major vessel and often there is a long thrombus extending from it into the brain. We feel that it is therefore important to clinically diagnose the incipient stroke patient and then perform angiographic studies in the hope that a surgically amenable lesion or lesions may be identified.

By noting the experience of others, together with our own endeavors during the past year, we have evolved a rapid, safe and efficient method for excellent visualization of the four major vessels of the neck. This method has been successful in over 100 studies performed on 54 patients.

In view of the complications and x-ray artefacts often encountered by others upon "needling" the carotid arteries, we have used exclusively an intracardiac catheter, Rodriguez-Alvarez type, No. 6-8. Entrance for the catheter has ordinarily been through the right brachial artery.

The catheter can be quickly and easily passed with fluoroscopic control into the right innominate artery. At this point the first injection of opague medium is made. Twenty cc of 50 per cent Hyapaque® is used and it is introduced with the Gidlund power syringe under pressure of ten kilo per square cm. Position of the patient (figure 1) is planned to obtain AP and lateral projections with the Schonander rapid changer. The films are exposed two per second, alternating each tube to eliminate scattered radiation which might fog the opposite film.

The results show excellent visualization of all branches of the right innominate artery. The bifurcation of the right common carotid artery, where many plaques may be found, is also well demonstrated. Depending somewhat on the size of the patient, we endeavor to include at least the lower cerebral vasculature on the films. Symptoms noted upon injection are flushing of the right side of the neck, face and head, which passes away in less than one minute.

From this point the catheter is advanced into the arch of the aorta, where the second injection is made. This injection is performed primarily to visualize the vessels of the left side of the neck. Due to the loss of much of the opaque medium into the systemic circulation, a larger bolus of Hyapaque is

---

Since his graduation from George Washington University School of Medicine in 1947, Haven W. Mankin, M.D., has been certified by the American Board of Radiology. In addition to his private practice in Oklahoma City, he is Assistant Professor of Radiology at the University of Oklahoma School of Medicine.

Doctor Mankin is affiliated with the American College of Radiology and the Radiological Society of North America.

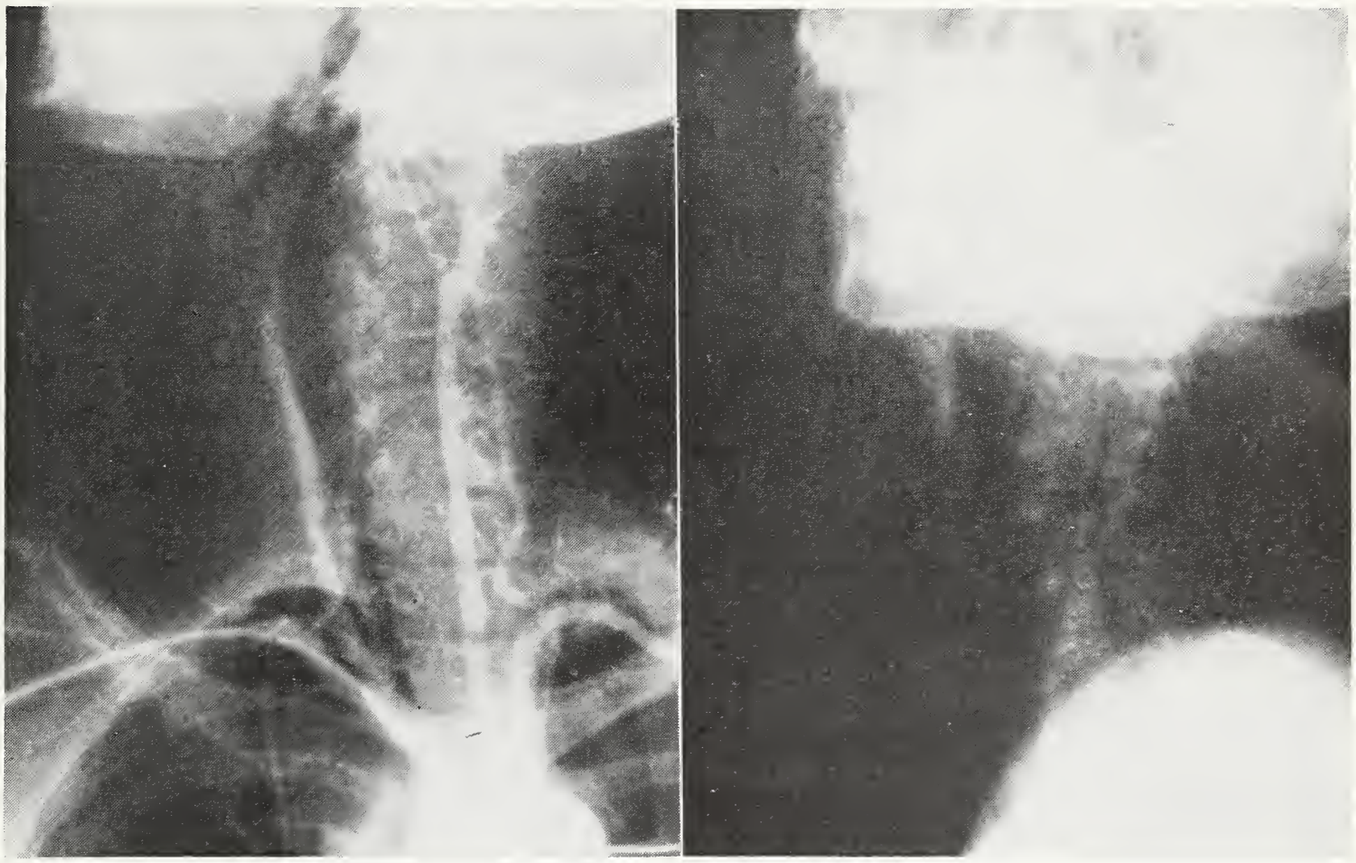


Figure 5. AP and lateral projections after aortic arch injection. Effort is primarily directed toward demonstrating the left major vessels. Asymmetry of the vertebrals is often seen and is normal.

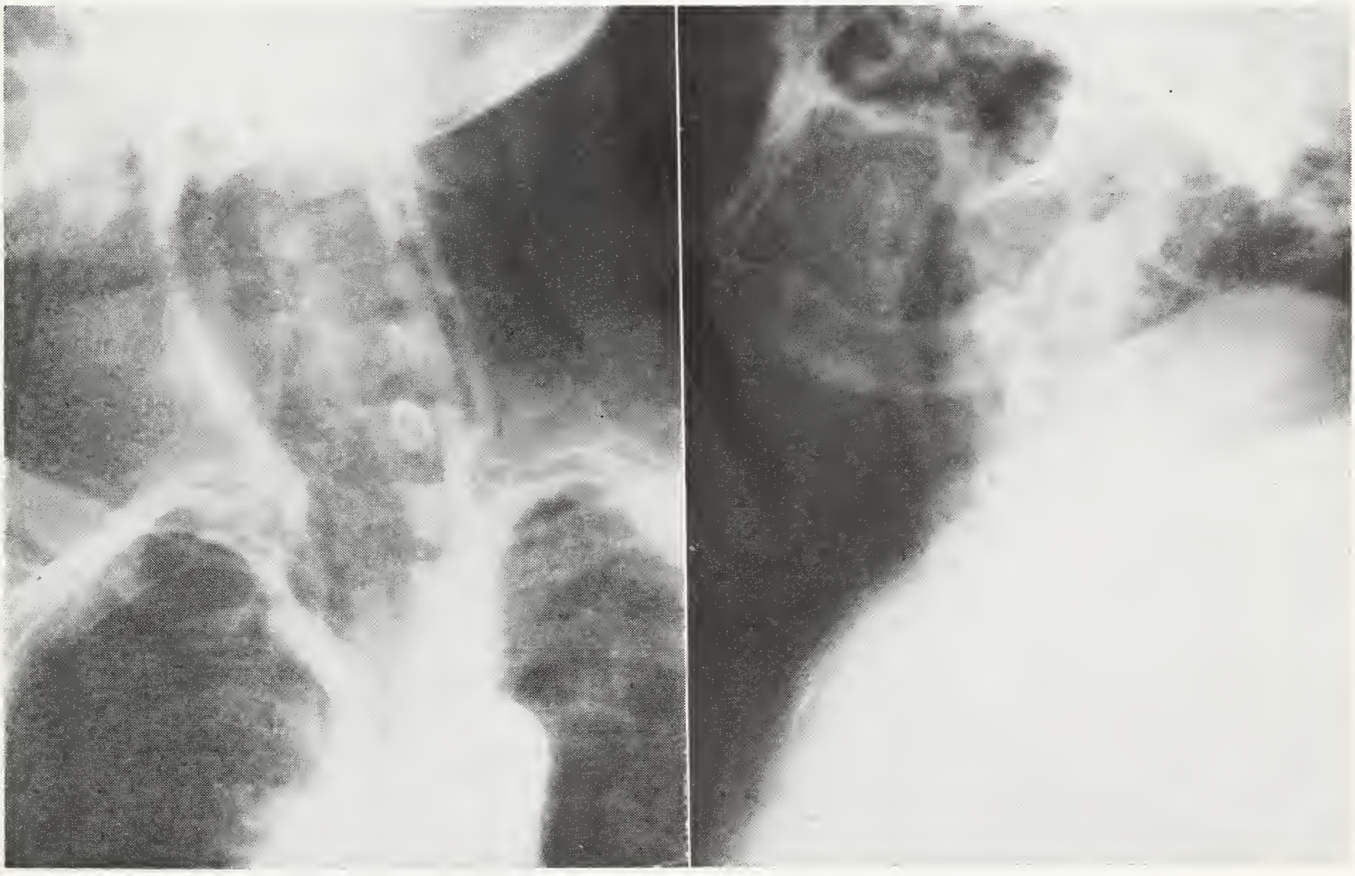


Figure 6-A Figure 6-B

Figure 6-A. Aortic arch injection. Figure 6-B. Note effective use of lateral projection to bring out left carotid bifurcation (just above mandible).

used (50 cc.) and a blood pressure cuff is placed on the left arm, inflated to at least 200 mm. mercury. The patient is positioned (figure 4) with the head turned far to the right and the chin elevated. In this manner the vessels of the two sides of the neck will not overlap and any abnormalities can be accurately localized.

On a few occasions the team member manipulating the catheter has been able to pass its tip into the left common carotid artery. Because of the increased contrast noted when an injection is made into this area, we always attempt this passage but most often the injection to visualize the left neck vessels must be made into the aortic arch.

Complications have consisted of brief convulsions in two patients upon injecting the right innominate artery. No hemiplegia or other neurological deficit has been caused. Certainly much of our good fortune in escaping complications has been the result of not studying the patients with already completed strokes. Most patients feel a warm to hot flush with the injection but this passes rapidly and has not been very uncomfortable.

A number of the patients examined and found to have surgically amenable lesions have undergone one or more operations involving endarterectomy or by-passing procedures. These results will be the subject of a future report.

SUMMARY

A relatively safe procedure of short duration has been presented to accurately localize lesions of the great neck vessels in patients with incipient or progressing strokes. Surgery on the easily accessible neck vessels offers great hope to these patients when in the past they could only await the complete and often fatal cerebral vascular accident.

BIBLIOGRAPHY

1. Colvin, H. A., Youngstrom, K., Poser, C. and Hardin, C.: Brachiocephalic Angiography in Athermatous Disease. Radiology 78: 246-247, February 1962.
2. Baker, H. L.: Angiographic Investigation of Cerebrovascular Insufficiency. Radiology 77: 399-440, September 1961.
3. Hamilton, L. C. and Weldon, W. V.: Antegrade Aortography and Arteriography. Radiology 77: 406-417, September 1961.
4. Keirns, M. M. and Whitdeather, J. E.: The Angiographic Study of Carotid Insufficiency and Cerebral Ischemia. American Journal of Roentgenology 81: 929-944, June 1959.

528 N.W. 12th, Oklahoma City, Oklahoma

Photography of x-ray films by Mr. Clayburn Ward, RT. (ARXT)

AMA'S FOURTH NATIONAL CONFERENCE ON THE MEDICAL ASPECTS OF SPORTS

The Fourth National Conference on the Medical Aspects of Sports sponsored by the American Medical Association, under the auspices of the AMA Committee on the Medical Aspects of Sports, will be held in Los Angeles, at the Statler Hilton Hotel on November 25, 1962. The Conference will be held in conjunction with the Clinical Meeting of the American Medical Association, November 25-28, 1962.

As was true of the previous Conferences on this subject held in Denver, Colorado; Washington, D.C.; and Dallas, Texas, the Fourth Conference will cover a wide range of subjects. Included will be papers, panels, and discussions relating to training and conditioning, prevention of injuries, recognition, referral and treatment of injuries, the physiology of sports participation and other subjects.

Those interested in receiving announcements concerning the Conference should address the Secretary, Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. □

The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program

ROBERT D. LINDEMAN, M.D.
Head, Heart Section, Oklahoma State Department of Health, assigned through the Heart Disease Control Program, USPHS

CLAUDE M. BLOSS, M.D.
Director, Chronic Disease Control Division, Oklahoma State Department of Health

FOREST R. BROWN, M.D.
Chief, Preventive Medical Services, Oklahoma State Department of Health

KIRK T. MOSLEY, M.D.
Commissioner, Oklahoma State Department of Health

SCREENING OF large populations for specific chronic diseases is an attempt to separate those persons most likely to have those conditions which potentially could be benefited by medical attention from those persons least likely to have them. In this way, diagnostic efforts and medical evaluation can be directed at confirming or ruling out disease in a group of individuals with a high incidence of positive findings.

The value of mass screening for specific chronic conditions has been the object of investigation by the Oklahoma State Department of Health in recent years. Mass x-ray screening primarily for tuberculosis has been discontinued with the decline in this disease. In 1956 in Muskogee County and in 1958 in Carter County, surveys were organized to evaluate the usefulness of the 70 mm. chest x-ray for the detection of heart disease.[1, 2] In the latter survey, the values of a single blood pressure determination, a single lead one electrocardiogram and a short questionnaire relative to cardiac symptoms were also evaluated. Since this time, additional screening tests for overweight, diabetes, anemia, pulmonary insufficiency and cervical carcinoma have been added and evaluated.

PURPOSE OF THE SCREENING PROGRAM

Health education has been adopted as the primary purpose of the screening program. Nothing is more effective in educating the public about a chronic disease than to do a specific test for this disease. Handing out pamphlets or showing movies on such a disease as diabetes is relatively ineffective for arousing interest when compared to actually doing a blood sugar test.

At the same time the second purpose of picking up undetected disease at an early stage is accomplished. Medical attention then will hopefully prevent or at least delay onset of more serious disease and/or their complications.

The third purpose of these surveys is investigative. The data collected through these surveys is useful in estimating the incidence of certain forms of chronic disease or conditions in various parts of the state. The usefulness of the various screening procedures and of screening surveys in general is also under critical evaluation.

THE MOBILE UNIT AND THE SURVEY TEAM

The 40-foot trailer with four manned stations can set up in a central location in any town under survey. Recently a second smaller unit has been added to house facilities for doing cervical cytology.

At the first station in the main unit, the screenee registers, giving his or her name, address and the name of his or her personal physician. No tests are done until a screenee lists the physician to whom he or she wants the results of the screening to be sent. Tests that the screenee is eligible for are checked. This varies dependent upon criteria agreed upon by the physicians in the county under survey. If a screening blood sugar is checked, the time since the last meal is also recorded. Chronic diseases already under medical supervision are noted and screening tests are not done. This prevents unnecessary referral to physicians. Height and weight are recorded for each screenee. Persons 25 per cent or more overweight are referred to their physicians. Literature on each of the chronic diseases is available for distribution at this station.

The screenee next visits the second station for a 70 mm. chest x-ray and pulmonary function tests. Chest x-rays are read not only for tuberculosis and heart disease but also for pulmonary neoplasms and chronic pulmonary conditions such as fibrosis and emphysema. A total vital capacity, a timed vital capacity and an indirect maximum breathing capacity (calculated as the one-second vital capacity multiplied by 38) have been obtained with a spirometer to evaluate these tests in screening for pulmonary insufficiency and to obtain information on a population-at-large. A questionnaire, covering past history of heart and lung disease, present symptoms of dyspnea, cough and wheezing and smoking habits, was filled out in two counties (McIntosh and Pittsburg) to be compared with the spirometric studies. No referrals have been made from these function studies alone.

At station number three, blood is drawn by a capillary finger prick for a post-prandial blood sugar using the Wilkerson-Hewson Clinitron[3] and a hemoglobin determination using the copper sulfate "falling drop" method.[4] Present blood sugar screening levels recommended are: 1) up to one hour, 180 mg. per cent, 2) one hour to two hours, 160 mg. per cent and 3) greater than two hours, 130 mg. per cent. Screenings with blood sugars higher than these levels are referred to their physicians for further evaluation. The screening levels usually used for the hemoglobin are 13.0 mg. per cent for men and 11.5 mg. per cent for women. Screenees with hemoglobins below these levels are referred to their physicians.

At station number four, a registered nurse does a blood pressure determination, a tuberculin skin test on all persons under 35 years of age and obtains a single lead diagonal chest lead electrocardiogram on all persons to be referred for hypertension. Chest x-rays are not obtained on anyone under age 35 unless they have a positive skin test. The incidence of abnormalities seen on x-ray is very low in this age group. Also this represents an attempt to keep radiation in the reproductive age groups to a minimum. A nurse is available to answer questions on the screening procedures.

Cervical cytology in an adjacent mobile unit recently has been added to the screening programs. A registered nurse with special training obtained at the University of Oklahoma Medical Center obtains the smears after visually inspecting the cervix. Women with cervices showing evidence of apparent abnormalities are referred for medical attention. All women with class three or higher Papanicolaou smears are similarly referred.

ORGANIZATION OF A COUNTY SURVEY

A local sponsoring organization, the county medical society and the county health department must submit requests before a survey will be organized in a county. After this, the supervisor-coordinator of the mobile unit visits the county and assists the county health department in organizing the survey. Six to twelve weeks are allowed for each county, dependent on the population of that county.

Pre-appointment scheduling of screenees is handled by the sponsoring organizations and county health departments. Five minutes are allowed for each screenee and walk-ins

Persons Screened and Tests Performed January 1959 to May 1962

	1959	1960	1961	1962 (4 months)
Total persons screened	41,251	26,784	16,438	4,186
Tests performed				
Chest x-ray, 70 mm.	30,496	21,252	12,142	3,183
Height and weight (overweight)	1,798	8,988	12,711	4,186
Tuberculosis skin test	11,568	17,779	7,820	1,417
Blood pressure determination	2,324	6,317	9,778	3,114
Diabetes screening	1,815	6,446	9,167	2,935
Hemoglobin screening	0	0	11,680	3,874
Pulmonary function tests	0	0	7,695	2,958
Electrocardiogram, complete or partial	0	122	1,845	454
Cervical cytology	0	0	20	1,473
Miscellaneous (serology, audiograms, dental screening, urinalysis, blood typing)	0	0	389	0
Total tests performed	48,001	60,904	73,247	23,594

Table I

are accepted as time permits. An average of 80 screenees can be seen daily. The physicians in the county under survey with the help of a State Health Department physician determine the tests to be done, the eligibility requirements for screenees (primarily age limits) and the screening levels for the procedures to be used.

Referral of "positive" findings to physicians is handled by the county health department. Screenees with "positive" findings are sent a sealed letter requesting them to seek further medical evaluation from the physician whom they gave as their personal physician. No mention is made of why they are being referred except when the referral is for overweight only. The screenee's physician receives a copy of all tests done with "positive" findings designated. Screenees with all findings "negative" receive no notification and all screenees are informed that this is the procedure at the time of the survey.

In order to evaluate the effectiveness of the various screening efforts, a questionnaire is sent to the physician with each referral asking only if the diagnosis is confirmed or excluded. Objections were voiced to the previous practice of requesting the diagnostic tests employed with the results; however, this information often is voluntarily included.

RESULTS OF THE SCREENING PROGRAMS AND SPECIFIC PROCEDURES

Table 1 shows a compilation of the procedures done in the last three and one-third years (January 1959 to May 1962). General county surveys have been conducted in Craig, Rogers, Garvin, Haskell, McIntosh, Pittsburg, Mayes, McClain, Cherokee and Hughes Counties. In addition, surveys have been conducted on selected groups and institutions in the interim periods between county surveys. The mobile unit has converted during the last three years from primarily tuberculosis screening to almost exclusively multiphasic chronic disease screening. This is apparent in table I. Although fewer persons are now screened, more procedures per person and more total procedures are done.

Table II shows the results of a sample county survey (Pittsburg County) conducted during April-June 1961. Screening procedures conducted during this survey included a height and weight for overweight, a 70 mm. chest x-ray for tuberculosis, heart or other abnormality, pulmonary function tests, a tuberculin skin test, a blood pressure determination and a screening post-prandial blood sugar and hemoglobin. Since this time cervical cytologies have been added. Some of the results for each of these screening procedures will be discussed separately.

Overweight—In the surveys to date, nearly ten per cent of the population screened has

been referred for being 25 per cent or more overweight. Females are more often referred than males. In females the referral rate has ranged from 7.8 per cent (Garvin County) to 14.7 per cent (Haskell County). In males the per cent is much lower ranging from 2.2 per cent (Garvin County) to 5.6 per cent (Rogers County).

There is some controversy over the value of screening for overweight. In a random interview conducted of screenees referred following the survey in Craig County, a number of referred screenees stated that because of the survey, they had seen their physicians, started on a diet and had lost weight. The referral was apparently the necessary incentive that they needed. Since statistical studies recently have confirmed that life expectancy is increased in overweight individuals who have reduced and stayed reduced, referral for overweight seems justified.[5]

70 mm. Chest X-ray. The 70 mm. chest x-ray is the oldest and best established of the screening procedures. Although the value in tuberculosis case-finding alone is now very questionable, the additional detection of new heart disease and other pathology seems to justify the use of the x-ray and is the subject of previous publications.[1, 2] The usefulness of the chest x-ray in the detection of new heart disease is also shown by the survey done in Pittsburg County (table II).

In a five-year period (1952-1956), nearly 400,000 70 mm. chest x-rays were taken on mobile unit surveys. The case-finding rate for new, active or questionably active tuberculosis was 1.0 case per 1000 x-rays. In addition 2.3 cases per 1000 x-rays of new, apparently inactive tuberculosis and 2.6 cases per 1000 x-rays of previously recognized tuberculosis were read. Tumor suspects were picked up in 0.7 cases per 1000 x-rays. In a followup of tumor suspects screened in 1953, inquiries were sent to physicians caring for 71 suspects and replies were returned on 36 of these. Fifteen had confirmed carcinoma of the lung, 11 had non-malignant tumors, four had tuberculosis, one had pneumonia and five still had undiagnosed disease. Since these studies, the incidence of new, active tuberculosis confirmed by appropriate followup has continued to fall and the incidence of lung tumor suspects has continued to rise.

Sample Results of A County Survey Pittsburg County. April-June 1961

Test	Number Screenees Eligible	Known Disease No.	Known Disease %	Number Screened	Referred No.	Referred %	Completed Questionnaires Returned: Total No.	Total %	Confirmed No.	Confirmed %	Borderline or Questionable No.	Borderline or Questionable %	Excluded No.	Excluded %
Overweight														
(25% or more)	4786	—	—	4786	413	8.6	—							
Tuberculosis														
Chest x-ray	3404	55	1.6	3349	12	.4	9	75	3	33.3	5	55.6	1	1.1
Skin Test (under age 35)	1274	—	—	1274	158*	12.4	—	—						
Heart Disease														
Chest x-ray	3405	269	7.9	3136	98	3.1	65	66	47	72.5	9	13.4	9	13.4
Hypertension														
Blood pressure (>160/100mm.)	3587	421	11.7	3166	382	12.1	—	—						
Diabetes														
Post-Prandial Blood Sugar (160 mg% up to 2 hr.; 130 mg% over 2 hr.)	3270	43	1.3	2337	165	5.1	87	52.5	21	24.2	25	28.8	41	47.1
Anemia														
Hemoglobin	4062	—	—	4062	196	4.8	75	38.2	48	64.0	17	22.7	10	13.3
Total	4786	668	14.0	4786	1104	23.1								

*Referred back to mobile unit for 70 mm. chest x-ray.

Table II

Pulmonary Function Tests (Total Vital Capacity, One-Second Vital Capacity and Indirect Maximum Breathing Capacity)—Pulmonary function tests were added to the screening surveys on a trial basis in 1961. Data collected on 4,922 subjects in two counties (Pittsburg, McIntosh) along with a questionnaire covering previous history of heart and lung disease, present symptoms of productive and non-productive cough, intermittent and constant wheezing and dyspnea and smoking habits serves as the subject of another publication.[6] In this study, the incidence of symptoms and the mean indirect maximum breathing capacities corrected for height and age are similar to that reported from rural Great Britain where chronic bronchitis and emphysema is listed as the most common cause of disability and is third in importance as a cause of death.[7] This comparison suggests that a similar unrecognized problem exists in this state and country. Mortality statistics taken from death certificate data show that chronic bronchitis and/or emphysema as the cause or underlying cause of death has more than doubled in the last five years in this state as well as in the whole country. This could be a real increase due to an increased incidence of smoking or to decreased deaths from acute pneumonia (attributable to antibiotic therapy). This would allow persons to later develop pulmonary insufficiency. This also could be only an apparent increase brought about by an increased willingness on the part of physicians to attribute death to chronic bronchitis and/or emphysema.

Present diagnostic criteria for chronic bronchitis and emphysema are primarily based on the presence of the symptoms of productive cough and dyspnea.[8, 9] The indirect MBC has not proved particularly useful in screening symptomatic from asymptomatic subjects so that its value as a primary screening test has not been established and it has not been used for referral. Ultimately, a more sensitive test of pulmonary function will be needed to detect early pulmonary disease. Certainly a chronic disease as prevalent as this condition needs more attention directed at early preventive efforts and treatment. The later medical management once pulmonary insufficiency develops is quite discouraging. The prominent role that cigarette smoking plays in the development of this disease was apparent and efforts directed at discouraging this habit at early ages would appear indicated. In this study, 60 per cent of all males smoked and 20 per cent of all females smoked. The percentage of smokers was much higher in the younger age groups.

The Post-Prandial Blood Sugar Test for Diabetes—Most screenees seen on the mobile unit have eaten within four hours prior to their visit. Various screening levels and time intervals have been tried and evaluated and the levels previously described appear to be the most suitable. Using these levels, however, a disturbing rate of over-referral has been encountered in some counties similar to that shown in table I for Pittsburg County. Since there is no way of knowing what tests were used in the evaluation for diabetes in referred screenees, a meaningful analysis of the questionnaire results is difficult. A urinalysis or even a fasting blood glucose might easily miss milder diabetes that would be apparent if a glucose tolerance test or post-prandial blood glucose had been done.

Some of this previous over-referral is due to referral of persons with borderline or indefinite end-reactions on the screening tests. This was responsible in Pittsburg County (table II) for 15 of 41 (37 per cent of the screenees in which diabetes was excluded. No confirmed diabetes was found in this group so that referral of these persons has been discontinued.

The incidence of previously recognized diabetes reported by persons visiting the unit has ranged from .9 and 1.0 per cent (Pittsburg and Garvin Counties) to 1.5 and 1.6 per cent (Haskell and McIntosh Counties). Only persons over age 35 are screened unless there is a family history of diabetes. The incidence of unrecognized, asymptomatic diabetes is so low in younger persons that use of the test seems unwarranted. The referral rates have ranged from 2.1 per cent (Garvin County) to 6.4 per cent (Haskell County). In special group surveys such as those conducted at Central State Hospital and at the Farm Women's Conferences, the referral rates have reached ten per cent.

In five county surveys (1959 to mid-1961) only 34 per cent of the screenees referred

were reported to have confirmed diabetes and another 15 per cent had borderline or questionable diabetes on followup. Since these surveys, the only change made in the screening levels was to raise the level during the first hour after eating from 160 mg. per cent to 180 mg. per cent. This should cut down on referral of screenees with high blood sugars obtained shortly after eating.

Unnecessary or over-referral of some normals is unavoidable in a mass screening program to insure that a minimum of the early diabetics are missed. The alternative is to raise the screening levels insuring that almost all persons referred have diabetes, however, early diabetes then may be missed. Which screening approach is most appropriate depends on how you answer the question, "What do we have to offer the early diabetic?"

Diabetics have a high incidence of arteriosclerotic and other complicating diseases. How effective good control of early diabetes is in preventing or delaying onset of these complications is the subject of much debate. Many diabetics over age 35 are overweight. Diabetes in these persons often can be controlled by diet and weight reduction alone. In addition, some early mild diabetics treated with oral hypoglycemic agents have shown improved carbohydrate tolerance and partial remissions of their diabetes.[10] Animal studies have shown that glucose loading may lead to fatigue atrophy of the pancreatic islet cells with resultant diabetes. This diabetes initially is reversible but later becomes irreversible. This state may be prevented by the oral hypoglycemics. If this can be extended to humans, certainly diet and weight reduction, and possibly oral anti-diabetic agents, may be useful in preventing or delaying onset of the diabetic complications and may actually reverse early diabetes. The latter suggestion is offered as speculation only and deserves further study before it can be recommended as routine procedure for physicians.

The Hemoglobin Screening for Anemia—From three to five per cent of subjects screened have been referred for evaluation of anemia. Males are screened at a hemoglobin level of 13.0 gm. per cent and females at 11.5 gm. per cent. Although the overall referral rate is about equal in males and females, most of the females fall in the 25-44 year age group and most of the males are over age 55. Undoubtedly most of the former have anemia due to excessive menstrual blood loss. In the older age groups, anemia may be the first sign of more significant diseases such as malignancies, chronic infections, gastrointestinal bleeding, renal failure or even pernicious anemia.

The Blood Pressure Determination—The number of screenees visiting the mobile unit who report previously diagnosed hypertension has ranged from 9.3 per cent (Garvin County) to 12.2 per cent (Haskell County). The number of persons referred for evaluation of new hypertension still runs high. The referral level has been revised upward from 140 mm. systolic and 90 mm. diastolic to 160 mm. systolic and 100 mm. diastolic under the age of 60 and 180 mm. systolic and 100 mm. diastolic over the age of 60. The rate of referral using levels of 160 mm. systolic and 100 mm. diastolic pressure for all persons has ranged from 7.2 per cent (Garvin County) to 15.3 per cent (Haskell County).

Persons with mild diastolic and even systolic hypertension have a substantially increased mortality and a much higher incidence of cardiac, cerebral and renal complications.[11] In the more severe hypertensives, the benefits of adequate therapy have been well demonstrated.[12-14] Similar evidence is not yet available to conclusively show that treatment of milder hypertension will effectively reduce the complications of hypertensive disease. In recent years, newer medications (chorothiazide, reserpine and guanethidine) have greatly simplified the treatment of hypertension. Potentially early therapy may alter the course of the disease and prevent or delay the development of hypertensive complications.

Tuberculin Skin Testing—This test has been carried over from the old tuberculosis screening surveys and should give an index of the potential for tuberculosis in a county or selected population. Tuberculin skin tests are done now only on screenees under the age of 35. In the counties studied to date, the incidence of positive reactors in those returning for interpretation of the test has ranged from 8.5 per cent (Garvin County) to 13.1 per cent (Haskell County) with the

mean for all counties surveyed of about ten per cent. This represents a considerable drop from that seen 20 years ago when tuberculous exposure was much more prevalent.

Pre-chest x-ray screening with the tuberculin test is now the routine in tuberculosis case-finding. As the infection rate declines, the skin test assumes more and more importance. Further importance is given to the test with the wider use of isoniazid among contacts of recent active disease and all reactors under three years of age.[15] The incidence of positive tuberculin skin tests in this latter age group has run 0.6 per cent in the county surveys.

Electrocardiograms—The use of the complete electrocardiogram is generally much too time consuming for large population surveys. It has been used in selected small surveys such as the Golden Age Club of the Salvation Army, the National Guard and the Oklahoma State Department of Health employee surveys. One person is able to obtain a maximum of 20 to 30 complete tracings daily dependent upon facilities available.

A single, oblique chest lead electrocardiogram has been devised and evaluated to determine its usefulness in screening larger populations.[16] This lead is obtained by placing a halter over the right shoulder without disrobing so the right arm electrode is located just under the clavicle to the right of the sternum and the left arm lead is located in the left posterior axillary line 2-3 finger breadths below the tip of the scapula. The leg lead electrode, acting as a ground, is held in the hand and the tracing is recorded on the Lead I channel.

Over 1,000 oblique chest tracings were recorded and compared with complete electrocardiograms in several suveys. Over 1,400 single lead tracings were then obtained in a survey at Central State Hospital to test its applicability in mass screening. One technician could easily survey up to 100 persons passing through the mobile unit daily. Nearly 90 per cent of the abnormal 12 lead electrocardiograms were interpreted as "abnormal" or "suspicious" using this single lead. In order to reach this level of effectiveness, about ten per cent of the normal 12 lead electrocardiograms also were interpreted as "abnormal" or "suspicious" and would have constituted unnecessary or "over-referral." This then would appear to be a fairly effective screening procedure for large populations.

At present, single lead tracings are obtained only on screenees already being referred with an elevated blood pressure. At present relatively little can be offered most screenees with electrocardiographic abnormalities without associated signs or symptoms or heart disease unless accompanied by other conditions such as hypertension or obesity, however, efforts are now under way in this country to show the value of dietary management, weight reduction and the effectiveness of hypocholesterolemic drugs.[17, 18] When something definitely beneficial can be offered the person with uncomplicated atherosclerotic heart disease, the screening electrocardiogram will warrant more extensive use.

Cervical Cytology — This screening test was first used in McClain County in early 1962 and already has become one of the most rewarding tests in use. Since health education is the primary aim of the mobile unit surveys, table III illustrates the need and potential value of this form of education. Less than half of the women that have had cytologies done in McClain and Cherokee Counties realized there was such a test. Less than 20 per cent in each survey had ever had cytologies done before. In addition, fear and embarrassment still prevented an additional 25 per cent of the eligible women visiting the unit from having cytologies done even after adequate explanation of the procedure. In one of the surveys, however, some of the women, after hearing of several early curable cancers being detected, later revisited the unit to have this test done.

Previous surveys in other areas in this country have indicated that five to ten cases of cervical carcinoma can be picked up per 1,000 cervical smears.[19, 20] Table III shows the followup on the first two surveys in McClain and Cherokee Counties. An incidence of suspicious and positive smears (classes 3-5) of 1.3 per cent has been obtained. Of these 19 positive smears in the first two counties studied, seven have confirmed malignancies while six have had a negative followup. We have no followup data yet on four. In addition another 7.3 per cent in the first county were referred for visible lesions

such as infection, cervicitis or other pathology which was not necessarily picked up by the smears.

One of the initial concerns expressed about this test was that a nurse rather than a physician would be collecting the smears. The possibility that obvious visible lesions not showing abnormal cytology would be missed was of concern. Also a bi-manual examination looking for ovarian and uterine abnormalities would not be done. It, of course, would be better to have a physician perform this examination, however, as indicated in these studies, more often it is a question of a nurse doing it or not having it done at all. Comparing the number of confirmed malignancies picked up in these studies with those obtained in other studies, it would not appear that any appreciable number are being missed.

These tests have made the women in both counties aware of the value of this form of preventive medicine either because they have had the test or have talked to someone who has. Many also now are aware of someone in the community "who had cancer diagnosed in time." The physicians in the counties where it has been used also have felt that this was the most useful test performed by the survey unit.

The effectiveness of the health education efforts by the mobile unit are difficult to quantitate. It becomes obvious when talking to screenees visiting the unit that surprisingly little is known about the chronic diseases and their early symptoms and signs. Some screenees even are unaware that such conditions exist. In a followup study in Craig County on a random sample of those screened, 93 per cent of the screenees that were referred to their physicians had seen them as requested. Most of these persons were aware of the procedures that had been done and why they were done. This has been the only direct effort to date that has been made to determine the educational value of the mobile unit surveys. The effectiveness of mobile unit surveys in picking up early undetected chronic disease has been covered.

What has been learned and what can be learned from these surveys? Recently significant differences in cardiovascular disease death rates (coronary artery disease, stroke, hypertension with and without heart disease and all other cardiovascular disease) have been found between counties in Oklahoma after these rates are corrected for age and sex differences between counties.[21] These rates are based on all deaths in white persons over age 25 over a 10-year period and are

McClain and Cherokee County Cervical Cytology Screening Surveys
Results of Educational Efforts and Followup On Patients Referred for Positive Pap Smears

	McClain County		Cherokee County	
	Number	Per cent	Number	Per cent
Total persons studied	545		817	
Screenees with previous knowledge of cytology	216	39.6	344	43.0
Source of this knowledge				
Previous cytology	71	13.1	154	19.1
Home Demonstration Club	15			
Word of mouth	53			
Magazine articles	52			
Medical advice	18			
Other	7			
Number of referrals (Class 3-5)*	7	1.3	12	1.5
Malignancy confirmed	4	0.7	3	0.4
Other significant pathology	1	0.2	1	0.1
Malignancy excluded	2	0.4	4	0.5
No followup	—	—	4	0.5

*Class 3 minus Paps (probably benign, but followup suggested) not included.

Table III

expressed as yearly death rates per 100,000 population. The lowest rates were seen in Love (508), Hughes (656), Washita (657), Major (671), Latimer (674), Cimarron (677), LeFlore (684) and Dewey (685) Counties. The highest rates were seen in Ellis (925), Nowata (918), Ottawa (917), Tulsa (890), Oklahoma (878), Washington (844), Rogers (832), Kay (828), Pottawatomie (826) and Muskogee (826) Counties.

The incidences of both known and newly detected overweight, diabetes, hypertension

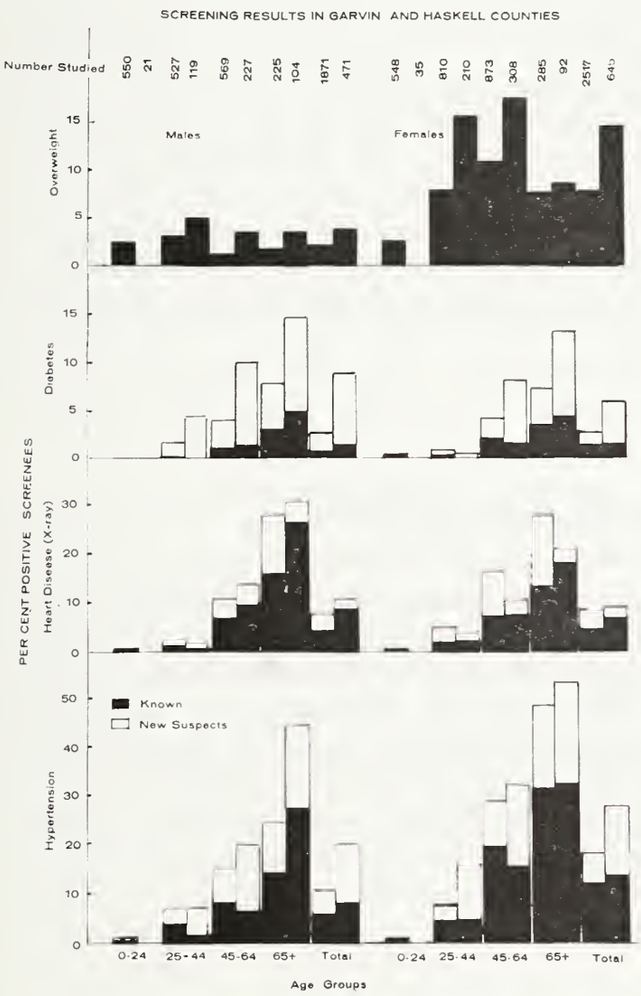


Figure 1

Screening Results in Garvin and Haskell Counties for Overweight, Diabetes, Heart Disease and Hypertension

The graph on the left represents the per cent of positive results for Garvin County and on the right the per cent of positives for Haskell County for each age group and by sex. The values at the top of the graph represent the number of persons studied in each age group in the two counties. The solid bar in the overweight categories represents the per cent of the screenees referred for being 25 per cent or more overweight. In each of the other categories the solid bar represents the per cent of persons with previously known disease and the open bar represents the per cent of persons referred because of positive screening results.

and heart disease were apparently higher in Haskell County than in Garvin County (figure 1). One of the explanations for this difference was that there was an older population surveyed in Haskell County. Figure 1 shows that even when corrections are made for age differences there still is a higher incidence of these conditions in Haskell County. Whether the populations studied in the mobile unit surveys are representative of the total county population is an important question which still is unanswered. A higher total age-sex corrected cardiovascular disease rate in Haskell County (741) than Garvin County (727) might be expected. There was actually little difference. The number of counties studied so far is insufficient to go very far in comparing differences between counties. The counties studied had age-sex corrected total cardiovascular disease death rates ranging from 656 (Hughes County) to 832 (Rogers County). Data has not yet been evaluated in Hughes County. Information obtained through these surveys may be useful in determining why the rates may be different in some counties. Hopefully more of the counties with either high or low death rates can be studied in the near future.

One can question whether death rate data obtained will be useful since there is movement of persons between counties and states. Actually in a random sampling of cardiovascular deaths between 1950-1959, of those certificates showing duration of residence in the county of death, two-thirds lived in the county of death more than 20 years and one-third greater than 40 years. This would suggest we are dealing with a surprisingly stable older population in Oklahoma. Epidemiological studies of cardiovascular and other chronic disease may be of value in such populations.

The surveys have met with some real problems and physician acceptance has not always been good. In a screening program, efforts are made to keep the number of screenees with "missed" abnormalities to a minimum at the same time keeping the number of unnecessary or "over-referrals" within reasonable limits. Some persons passing through the unit receive a false sense of security. Although most realize that a visit through the unit is not a substitute for a visit to his or her physician, especially if un-

explained symptoms are present, some feel that any and all diseases will be diagnosed on the unit and occasionally someone has the impression that a trip through the unit will cure these diseases too. Efforts by all personnel on the unit are made to emphasize that a visit through the unit is by no means a substitute for a yearly physical examination and that certainly any unexplained symptoms should be checked by the screenee's personal physician. Literature is available emphasizing the early signs and symptoms of the diseases being screened for.

Occasionally a referred screenee is convinced he or she has a condition even after diagnostic tests by the personal physician have ruled out its presence. The screenee is then left with doubts about his or her physician's capabilities. Again efforts are made to stress that referral to a physician only suggests that the screenee may have a condition and further evaluation and diagnostic tests by the private physician are indicated. The screenee is unaware of the reason for referral at the time of the visit to the physician's office. The physician then has the perogative to tell the patient as much about the screening results as he deems indicated.

Finally, a few physicians fear that these surveys are a form of free medical care and represent interference with private medicine. The effect is to greatly increase the work load of the physicians in the county under study. Problems have arisen from overloading already busy physicians with often asymptomatic screenees so that less time can be spent with the more acutely ill patients. A few physicians have failed to develop much enthusiasm for employing preventive medical practices in apparently healthy individuals.

The overall value of screening surveys is still not completely determined. The use of these mobile unit surveys can be justified at present as a research or investigative tool. It will be necessary to decide whether the educational value and the effectiveness in picking up new disease warrant its continued use. The public is very responsive to our efforts to date and undoubtedly the level of interest in these chronic diseases has been raised in the counties surveyed. Whether this has had a beneficial effect in the communities surveyed can probably best be determined by the physicians in the areas visited. Generally, the responses of the physicians have become increasingly more favorable over the last two years as techniques and methodology have been refined.

The actual operational cost during 1961 was about $2.20 per person screened or slightly less than $.50 per test done on the multiphasic surveys. This is based on the cost of actual operation of the unit, i.e., salaries of the unit personnel and supervisor-coordinator, travel expenses and maintenance supplies during the year 1961. If the hidden costs of depreciation of equipment, physician and county health department personnel time, time spent by clerks handling and analyzing data and volunteer help were added in, the cost, of course, would be higher. Still if this is an effective way of separating that 20-25 per cent of the often asymptomatic persons with early chronic diseases most likely to be benefited by medical attention, it is relatively inexpensive.

Enough counties have now extended invitations or expressed interest in the mobile unit to keep it operating at least another two years and interest has been building rapidly. New screening procedures will be tried in selected surveys in the future to evaluate their potential. Evaluation of urines for protein and chronic infection, glaucoma testing, determination of cholesterol or other lipids and possibly pulmonary cytology in selected groups are examples of procedures which deserve trials.

CONCLUSIONS

The mobile unit multiphasic screening surveys have three primary purposes. The first is health education. The use of screening procedures for specific chronic diseases appears to be the most effective method for stimulating interest. Secondly, an attempt is made to detect chronic disease at an early stage when treatment may be effective in preventing or delaying more serious complications. Finally, an estimate of the incidence of the various chronic diseases and conditions in individual counties in the state is made in an attempt to pin down possible factors which may be causing apparent dif-

ferences in morbidity and mortality rates. An evaluation of specific screening tests and the entire screening program is also underway. Much more extensive use and analysis of these surveys will be necessary to determine whether these preventive medical efforts have a beneficial effect on the health of the communities studied. □

BIBLIOGRAPHY

1. Thompson, W. B., Hudnut, H., Russo, P., Brown, F. R. and Mosley, K. T.: "A Review and Study of Cardiovascular Disease Screening with the Miniature Chest X-Ray," J. Chron. Dis., 13: 148, 1961.
2. Brown, F. R.: "Multiphasic Screening Program Including a Cardiovascular Survey in Carter County, Oklahoma," South. Med. J., 54: 1383, December, 1961.
3. Wilkerson, H. L. C. and Heftmann, E.: "Screening Method for Blood Glucose," J. Lab. and Clin. Med., 33: 236, February, 1948.
4. Gradevohl, R. B. H.: "Clinical Laboratory Methods and Diagnosis," C. V. Mosby Co., St. Louis, Volume I, 284, 1956.
5. Build and Blood Pressure Study, Volume I, Society of Actuaries, p. 117, Chicago, 1959.
6. Lindeman, R. D.: "A Survey of Pulmonary Symptoms and Function in 4,922 Rural Oklahomans," submitted elsewhere.
7. Garston, B.: "The Natural History, Pathology and Treatment of Chronic Bronchitis," Dis. Chest, 40: 530, 1961.
8. Fletcher, C. M.: "Chronic Bronchitis: Its Prevalence, Nature and Pathogenesis," Amer. Rev. Resp. Dis., 80: 483, 1959.
9. Statement by the Committee on Diagnostic Standards for Non-Tuberculous Diseases, "Chronic Bronchitis, Asthma and Pulmonary Emphysema," Amer. Rev. Resp. Dis., 85: 762, 1962.
10. Fajans, S. S. and Conn, J. W.: "Tolbutamide-Induced Improvement in Carbohydrate Tolerance of Young People with Mild Diabetes Mellitus," Diabetes, 9: 83, 1960.
11. Build and Blood Study, Volume I, Society of Actuaries, p. 158, Chicago, 1959.
12. Perry, H. M., Jr. and Schroeder, H. A.: "The Effect of Treatment on Mortality Rates in Severe Hypertension," Arch. Intern. Med., 102: 418, 1958.
13. Hodge, J. V., McQueen, E. G. and Smirk, H.: "Results of Hypotensive Therapy in Arterial Hypertension, Based on Experience with 497 Patients Treated and 156 Controls, Observed for Periods of One to Eight Years," Brit. Med. J., 1: 1, 1961.
14. Leishman, A. W. D.: "Hypertension-Treated and Untreated, A Study of 400 Cases," Brit. Med J., 1: 1361, May 30, 1959.
15. Pryles, C. V.: "Treatment of the Child with Recent Conversion of the Tuberculin Test to Positive," New Eng. J. Med., 266: 1103, May 24, 1962.
16. Lindeman, R. D., Kyriakapous, J. and Conrad, L. L.: "Evaluation of a New Single, Oblique Chest Lead for the Rapid Screening of Electrocardiographic Abnormalities in Large Populations," accepted for publication in American Heart Journal.
17. Dayton, S., et al.: "A Controlled Clinical Trial of a Diet High in Unsaturated Fat," New Eng. J. Med., 266: 1017, May 17, 1962.
18. Stamler, J.: "Current Status of Dietary Prevention and Treatment of Atherosclerotic Coronary Artery Disease," Progr. Cardiov. Dis., 3: 56, 1960.
19. Kaiser, R. F., et al.: "Initial Effect of Community-Wide Cytologic Screening on Clinical Stage of Cervical Cancer Detected in an Entire Community. Results of Memphis-Shelby County, Tennessee, Study," J. of Nat. Cancer Inst., 25: 863, October, 1960.
20. Dunn, J. E., Jr., Slate, T. A., Merritt, J. W., Martin, P. L.: "Findings for Uterine Cancer from one or More Cytologic Examinations of 33,750 Women," J. Nat. Cancer Inst., 23: 507, September, 1959.
21. Lindeman, R. O. and Assenzo, J. R.: "Correlations Between the Hardness and Mineral Content of Drinking Water and Cardiovascular Disease Death Rates in the Counties of Oklahoma," submitted elsewhere.

HOSPITAL PHARMACY POLICIES CLARIFIED

Representatives of the Oklahoma Hospital Association and the Oklahoma State Medical Association met with the State Board of Pharmacy on August 23rd for the purpose of arbitrating a dispute arising from the Board's allegation that certain hospitals were violating the pharmacy law by operating pharmacies without the direction of a registered pharmacist and, moreover, were filling outpatient prescriptions.

Hospital and medical representatives argued that the law was impractical to implement since all hospitals *could not* hire pharmacists and since few retail drugstores stayed open at night to handle emergency prescriptions.

After discussion, the Board of Pharmacy agreed to the following guidelines:

1. It is recommended that all hospitals having the services of a registered pharmacist obtain a drug store license, in accordance with the provisions of the new pharmacy law, Enrolled House Bill #655, passed in the 1961 session of the Legislature.

2. It is recommended that hospitals not having a registered pharmacist consider hiring a part-time registered pharmacist to act as a consultant to the administration of the hospital in the development of rules and regulations pertaining to pharmaceutical services to hospital patients.

3. It is recommended that hospitals not having a full-time or part-time registered pharmacist designate an active member of the hospital medical staff or a committee of the hospital medical staff to assist the administration of the hospital in the development of rules and regulations pertaining to the pharmaceutical services of hospital patients and to generally supervise the hospital drug room.

4. It is recommended that all hospitals discourage the filling of prescriptions of drugs to outpatients except in emergency cases. □

OSMA JOURNAL / heart page

Differential Excretion Studies in the Evaluation of Unilateral Renal Vascular Disease

C. ROBERT COOKE, M.D.

THE PROBLEM of accurate diagnosis in patients with hypertension due to unilateral renal vascular disease has been the subject of intensive investigation during the years since Goldblatt performed his classic experiments in 1934. The therapeutic implication of these studies was evident when it was demonstrated that the hypertension produced by decreasing the blood flow to one kidney could be relieved by removal of the ischemic organ. Almost immediately, attempts were made to utilize this important information in the treatment of hypertensive patients with the result that nephrectomies were performed, in many instances, before adequate criteria or methods of selection were established. Persistence of hypertension in improperly selected cases, resulted in an understandable loss of enthusiasm for this approach. For a number of years, efforts to increase the accuracy of case selection were hampered by a lack of information regarding the basic functional aberrations which characterize the ischemic kidney.

In 1954, Howard and his group demonstrated the value of determining the volume and composition of urine collected simultaneously from each kidney by ureteral catheterization. In these and subsequent studies, a unilateral reduction in urine volume of 50 per cent or greater and a 15 per cent or greater reduction in the concentration of sodium in the smaller volume was considered significant.

Later studies have shown that the reduction in sodium concentration is variable and that, in fact, the concentration of sodium in urine from the involved side may even be greater than the concentration in urine from the contralateral normal kidney. This is especially true when the ischemic involvement of the kidney is segmental in nature and is not due to occlusive disease of the main renal artery. These lesions, however, are still accompanied by a significant decrease in the rate of urine flow from the involved side.

In an effort to avoid the problem of bladder leakage in the performance of these studies, attempts have been made to utilize concentration ratios instead of volume determinations as primary indices of unilateral ischemia. The disadvantage of this approach lies in the fact that the use of concentration ratios alone may result in misinterpretation of results obtained in the presence of pyelonephritis or other renal medullary damage. In these cases, reabsorption of water is greater in the more normal kidney whereas in unilateral ischemia, water reabsorption is more pronounced in the ischemic organ. The differentiation between these two conditions depends on the accurate determination of urine volume from the two sides.

Other methods of diagnosis have been used, either separately or in conjunction with differential excretion studies, and, in many instances, are quite helpful in the interpretation of equivocal results. Aortography has been utilized extensively but is not a substitute for carefully collected functional data. The results of intravenous pyelography and various radioisotope scanning procedures may be misleading unless correlated with accurate functional data.

Accurate pre-operative diagnosis is now possible and criteria for surgical intervention in cases of unilateral renal vascular disease are becoming firmly established. □

* * * * * * *

A "Service Directory" outlining the facilities in the State of Oklahoma where special procedures, techniques, and treatments are available to patients with cardiovascular diseases may be obtained by writing the Oklahoma State Heart Association, 825 N.E. 13th, Oklahoma City 4, Oklahoma.

Dean's Message

During the 1961-62 academic year there were disquieting signs that the Medical Center Library was in serious financial straits. The new book shelf, for example, remained empty. The immediate problem was inescapable. The library budget, dependent upon state funds, had not increased sufficiently since 1960 to permit new book purchases.

The Library Committee thought it fitting to explain the library's status to a wide audience, first in a circular within the Medical Center, then in the May issue of *Commentary*.

It is gratifying to report that several groups acted to provide emergency funds for the current year. The Oklahoma Urological Association gave $75 toward books to memorialize the names of its recently deceased members. Phi Chi Fraternity donated $72.20 in undesignated funds. The Department of Biochemistry provided $300. The Dean's Office provided a special fund of $2,000 for the purpose.

All patrons of the library will benefit from these gifts, which have alleviated the acute book deficit for the current year.

In the spring, Miss Lilah Heck, head librarian for 23 years, resigned to accept the position of librarian for the Federal Aviation Agency Civil Aeromedical Research Institute in Norman. During her tenure, the library reached its present 53,500-volume, 1,150-periodical status. The library ranks 45th among the medical school libraries of this country in the number of volumes and 24th in the number of journals regularly received—a level that should at least be maintained.

As of June 1, we secured the services of a new head librarian. Mr. Leonard Eddy came to us from the University of Oklahoma main library at Norman, where he was serving as science librarian and had accomplished much in a short period for that new division of the OU library.

The recruitment of another qualified librarian to succeed Miss Heck, coupled with the concern for the future of our library that has been demonstrated by faculty and students, are heartening developments.

But there remains the basic problem of adequate and continuing support, a problem which cannot be solved by temporary corrective measures. Paradoxically, if present trends in financing continue, the library's difficulties will increase as the Medical Center grows, for in recent years the center's major support has been in the form of restricted funds that cannot be applied to the operation of a library. □

Mark R Everett

Cholesterol Pleural Effusion*

FREDERICK D. MANNERBERG, M.D.
EDWARD N. BRANDT, Jr., M.D.
M. B. SHOOK, M.D.

THE PRESENCE of a high cholesterol concentration and cholesterol crystals or both in pleural effusions is rare, and has been entitled cholesterol thorax, cholesterol pleurisy, and cholesterol pleural effusion. The latter is the most descriptive and common terminology. This entity was first described by Churton in 1882,[1] although Nauyn,[2] and deMoussy[3] are usually given credit for recognition of the first case. The first patient reported in the United States was described in 1917 by Shulman.[4] There have now been 102 cases reported in the literature. Coe and Aikawa[5] recently published an extensive review of most of these cases. Since February 1961, three cases have been seen at the University of Oklahoma Medical Center. It is the purpose of this article to present the pertinent features of these cases and to review briefly clinical and etiological aspects of this entity.

*Department of Internal Medicine, and Biostatistical Unit of The Department of Preventive Medicine and Public Health, University of Oklahoma Medical Center, and Veterans Administration Hospital, Oklahoma City, Oklahoma.

Case I: This 40-year-old white male noted the onset of typical rheumatoid arthritis in 1950. A radiograph of the chest at that time was within normal limits, but nine months later, a repeat examination revealed a homogenous density suggestive of an organized pleuritis in the right base. He was asymptomatic and no further investigation was performed. In 1955, Prednisolone, ten mgs. daily, was started for the rheumatoid arthritis. This medication was continued for the next five years. In 1957, x-ray film of the chest revealed a cavity in the right upper lobe, and a pleural effusion on the right. Three sputum smears revealed acid-fast bacilli, and anti-tuberculous therapy was begun. P.P.D. skin test for tuberculosis was positive in 48 hours. A thoracentesis yielded 300 cc. of yellow-tan fluid containing white "curd-like" particles. The protein concentration of the fluid was 3.9 gms. per cent, and the sugar was 12 mgs. per cent. No cholesterol analysis was done. Cultures of the fluid for pyogenic and tubercle organisms were sterile. Although he left the Veterans Administration Hospital against medical advice early in 1958, he continued to take anti-tuberculous medication until late 1959.

In June, 1960, he was readmitted and anti-tuberculous therapy restarted. Laboratory

data included a reactive latex agglutinin for rheumatoid arthritis and negative lupus erythematosus preparations. Six sputum smears and cultures showed no tubercle bacilli. Roentgenograms of the chest revealed loculated fluid in the right costophrenic angle. He was asymptomatic and clinically progressing well until early 1961 when he was admitted with right pleuritic pain accompanied by chills and fever of 24 hours duration. A thoracentesis on the right revealed 650 cc. of yellowish flocculent opaque fluid containing cholesterol crystals on microscopic examination. Cytological examination of the fluid was negative for malignant cells, and cultures for pyogens, fungi, and acid fast bacilli were negative. The serum cholesterol was 173 mgs. per cent. He responded to symptomatic and anti-tuberculous therapy.

Following discharge, he was asymptomatic until November, 1961 when he noted the production of sputum similar in appearance to the previously obtained pleural fluid. Three days later, he experienced severe right pleuritic pain and dyspnea at rest. Radiograph of the chest revealed a partial pneumothorax on the right. A chest tube was inserted and purulent material was obtained from which *Diplococcus pneumoniae* was cultured. One month later, bronchograms disclosed bronchiectasis of the right basilar segments, and a right thoracotomy was performed. A loculated space surrounded by 1.2 cm. thick pleura was found over the right diaphragm. A right partial pleurectomy, and lower lobectomy were performed. The pathologists reported the pleura to be composed of dense fibrotic tissue containing clusters of polymorphonuclear cells.

Case II: The second patient is a 41-year-old white male with a 17 year history of rheumatoid arthritis. Repeated x-ray films of the chest revealed persistent obliteration of the right costophrenic sulcus since 1953, and bilateral small pleural effusions since 1958. He had never received corticosteroids for his arthritis. Previous serum cholesterol determinations had ranged from 226 to 365 mgs. per cent. Skin tests for tuberculosis had been positive for 12 years.

He was admitted to the Veterans Administration Hospital in May, 1961 with a three day history of cough, shortness of breath, and sputum production. The physical examination revealed dullness to percussion, absent fremitus, and decreased breath sounds in both lung bases. Except for rather minimal rheumatoid joint deformities, the remainder of the physical examination was not remarkable. Serum cholesterol was 173 mgs. per cent with 73 per cent esters. Serum lipid phosphorus was 8.9 mgs. per cent and serum triglycerides were 113 mgs. per cent. A thoracentesis yielded 1200 cc. of turbid fluid with a metallic sheen. Analysis of this fluid revealed a specific gravity of 1.023, protein of 5.4 gms. per cent, cholesterol of 1,458 mgs. per cent, lipid phosphorus of 26.9 mgs. per cent, and triglycerides of 26.2 mgs. per cent. Cultures were negative. Cytological examination revealed no malignant cells. Pleural biopsy revealed fibrosis and chronic inflammation. Other laboratory data included negative lupus erythematosus preparations, and total serum proteins of 7.0 gms. per cent with 3.6 gms. per cent albumin. Numerous sputum smears and cultures revealed no acid fast bacilli. Latex agglutinins for rheumatoid arthritis were reactive in a dilution of 1:320.

He was asymptomatic until November, 1961 when he was readmitted with cough, shortness of breath, and sputum production. A repeat thoracentesis yielded similar fluid with a cholesterol content of 945 mgs. per cent. He was treated empirically with isoniazid and discharged for outpatient followup.

Case III: The third patient is a 48-year-old white female who was found to have pulmonary tuberculosis in 1939. She was treated with bedrest and therapeutic pneumothorax. A left pleural effusion was noted at that time. Since then she has been followed with chest roentgenograms every six months without apparent change in the effusion. She was asymptomatic until August, 1961 when she noted the onset of malaise, shortness of breath, and an increase in her chronic cough. She was admitted to the University Hospital for evaluation. She denied recent hemoptysis, weight loss, chills, fever, and night sweats. The physical examination revealed dullness to percussion, increased fremitus and decreased breath sounds over the lower left lung field, and was otherwise noncontributory. The routine laboratory examinations were within normal limits. P.P.D. skin test was positive in 24 hours.

Serum cholesterol was 264 mgs. per cent, and serum triglycerides were 265 mgs. per cent. Numerous sputum smears and cultures for acid fast bacilli were negative. An x-ray film of the chest revealed a left pleural effusion with displacement of the mediastinum to the left.

A thorancentesis yielded 100 cc. of white, opaque, floculent fluid containing white "curd-like" material. Analysis of this fluid revealed cholesterol content of 648 mgs. per cent, triglycerides of 111 mgs. per cent, and protein of 5.9 gms. per cent. Numerous cholesterol crystals were present, and cultures for pyogenic and tubercle organisms were negative. A pleural biopsy showed thickened fibrotic hyalinized connective tissue. The patient was treated empirically with anti-tuberculous therapy.

ETIOLOGY AND PATHOGENESIS

The etiology and pathogenesis of cholesterol pleural effusions is unknown. Chronic pleural effusions are not uncommon, but the presence of cholesterol in these effusions is infrequently reported. That cholesterol is apparently deposited slowly is evidenced by a patient in whom frequent thoracentesis over a two month period depleted the cholesterol in the fluid, but eight months later, the crystals were again present.[5] Over the years there has been much speculation but very little investigative work as to the etiology of this entity. Churton in 1882[1] believed that the products of fatty degeneration were enclosed in a pleural cavity whose walls were inflamed and consequently more inclined for productive than absorptive activity leading to a further deposition of lipid substances. Weems in 1918[15] suggested that the cholesterol crystals were present because of the reduced resorptive capacity of the thickened pleura. Durham and Diamond[10] related the deposition of cholesterol to the destruction of the tubercle bacillus with secondary alteration of the lipid constituents of the effusion. Moll and Fowweather[17] reviewed the work of Desbores concerning the changing cholesterolytic power of aging fluids. This work suggested that old body fluids have a tendency to be supersaturated with cholesterol and thereby precipitate it spontaneously. Erwin[14] in 1941 mentions two possible factors in the pathogenesis. The first is an exudation of cholesterol into the effusion from the blood stream; and secondly poor cholesterol resorption by thickened pleura. Curran[13] in 1948 presented the concept that contact of the fluid with cholesterol tends to precipitate it, and therefore that solid cholesterol from a degenerate or caseous focus in the pleura may initiate this phenomenon. Erythrocytes and leukocytes are both high in cholesterol content and it has been suggested that this might be one source of the cholesterol. Coe and Aikawa[5] divide the theories into "general metabolic" and "local process" groups. The general metabolic theory of an abnormality of lipid metabolism is not supported by the finding that the pleural fluid lipid content in these cases is usually not related to the serum lipid level. Furthermore, no lipodystrophy has thus far been demonstrated. The local process concepts suggest that the cholesterol may originate from breakdown of cells high in cholesterol content; that the cholesterol is transported by the blood stream to the pleural space and trapped by a thickened pleura; or finally, that the cholesterol is produced *de novo* in the pleural space and trapped there.

Radioisotopes were used to study two cases[5]. I^{131} labeled albumin was injected intravenously in an attempt to study transfer into the pleural space; C^{14}-2-acetate was injected intrapleurally to study *de novo* production of cholesterol; and C^{14}-4-cholesterol was injected intrapleurally to study absorption of cholesterol by the pleura. The results were inconclusive but the data do suggest a somewhat slower transfer of albumin into the pleural fluid in the more chronic effusions. No evidence for *de novo* production of cholesterol was obtained. Bole[18] showed that P^{32} administered both *in-vivo* and *in-vitro* is incorporated into phospholipids by inflammatory tissue produced by polyvinyl sponge implants. Also, using C^{14} labeled glycerol, he demonstrated the capacity of inflammatory tissue to synthesize neutral lipids and phospholipids. This evidence suggests that the chronic inflammatory reaction of the pleura could produce lipids *de novo*. There have been 14 cases of cholesterol pericarditis reported in the literature[19] and experimental

work with dogs by Ehrenhaft and Taber[20] using a crystalline suspension of cholesterol injected into the pericardial sacs produced pericardial and epicardial thickening, patchy areas of granulation tissue, and adhesions in six to ten weeks. This raises the possibility that the pleural thickening and fibrous tissue found in cholesterol pleural effusions is produced in part by cholesterol in the fluid.

The experimental evidence to date is inconclusive as to the exact mechanism responsible for the presence of cholesterol in pleural effusions, but it does suggest that this may occur in several ways including *de novo* cholesterol production, and decreased pleural resorption. It seems unlikely that the presence of the tubercle bacillus or a generalized lipodystrophy are specific causative factors.

CLINICAL CHARACTERISTICS

Most reported cases of cholesterol pleural effusion have been associated with a chronic effusion. This was true of our three cases as well. The usual time required for the development of cholesterol in the pleural effusion is five years,[5] but it may occur in one year or require over twenty years. It is most commonly seen in middle aged males but has been reported in a nine-year-old girl,[6] and can apparently occur in almost any age group.

Pulmonary tuberculosis is frequently associated with the development of a cholesterol effusion, and two of our patients had this disease. Six of the thirteen cases in the American literature,[5, 7, 8, 9, 10, 11] and six of the eight British cases[6, 12, 13, 14] had pulmonary tuberculosis. Only two cases have been reported in which tubercle bacilli were cultured from the pleural fluid.[12]

Two of our patients had rheumatoid arthritis which has never been reported in association with cholesterol pleural effusions. Pleural effusions have been reported in rheumatoid arthritis patients,[15] but the choles-

CASE	ETIOLOGY OF EFFUSION	Duration of Effusion	Pleural Fluid Cholesterol Mg. %	Pleural Fluid Phospholipid Mg. %	Serum Cholesterol Mg. %	Serum Phospholipid Mg. %
A.	Cholesterol Pleural Effusions					
1.	Probably Pulmonary Tuberculosis	11 years				
2.	Unknown	8 years	1458	26.9	173	8.9
3.	Probably Pulmonary Tuberculosis	22 years	648		264	
B.	Other Pleural Effusions					
1.	Pseudocyst of the pancreas	5 months	10.5	4.65	103.0	5.4
2.	Metastatic Carcinoma to the Pleura. Primary unknown.	5 weeks	159		221	
3.	Cirrhosis and nephrosis. Inactive pulmonary tuberculosis	4 years	116	3.85	199	9.35
4.	Pleural metastasis of a renal carcinoma	5 weeks	92	2.0	246	10.0
5.	Uremia secondary to pyelonephritis	4 months	26.2	1.43	201	9.5
6.	Cirrhosis	Unknown	61.0	2.99	101.0	6.58
7.	Rheumatic heart disease with congestive heart failure	14 months	27.5	8.14	348	9.1
8.	Myocarditis of undetermined etiology with congestive heart failure	1 month	46	1.2	158	6.5
9.	Bronchiectasis and previous thoracotomy for resection	Unknown	18.0	4.3	90.0	5.9
10.	Pulmonary infarction	2 days	33.0	1.21	424.0	14.4
11.	Lobar Pneumonia	12 days	72	3.4	207	9.2
12.	Pulmonary tuberculosis, moderately advanced, active 3 months	3 months	36.9	1.16	415	10.8
13.	Pleural effusion; idiopathic. P.P.D. skin test positive	2 months	143			
14.	Carcinoma of the lung	3 months	63			
15.	Pleural effusion; idiopathic. P.P.D. skin test negative	4 months	169	4.7	281	11.4
16.	Pulmonary tuberculosis, minimal, inactive 20 years	13 years	136	4.4	335	15.4

TABLE I

terol content has not been reported. Since only about half of the reported patients have had pulmonary tuberculosis, and since it also occurs in association with other diseases, it would seem that cholesterol pleural effusions may evolve from pleural effusions of several sources. In particular, it does not seem to be secondary to an abnormality in lipid metabolism since these reported cases in which serum lipid studies have been performed including our three, have had normal serum cholesterol and other lipids.

Symptoms associated with this entity are generally due to the underlying disease process or to the impairment of pulmonary functions by the effusion or both. All three of our patients had symptoms of shortness of breath, and all were relieved by thoracentesis.

The pleural fluid grossly has a metallic sheen and is usually turbid. Its color varies from white to dark brown and may be frankly hemorrhagic. Microscopic examination usually reveals the typical rhomboid cholesterol crystals.

The fluid cholesterol content varies greatly but has been reported to be as high as 4,000 mgs. per cent.[5] Cholesterol crystals have been reported in fluid with a cholesterol content of 133.3 mgs. per cent,[10] and have been absent from fluid with a cholesterol content of 313 mgs. per cent.[5] Furthermore, there is no consistent relationship between the cholesterol contents of the fluid and serum. Because of the simplicity of looking for these crystals, this procedure should be performed on any turbid pleural fluid, and furthermore, cholesterol determinations should be done. The cholesterol pleural fluid is usually alkaline with a specific gravity of 1.020 or greater. Total protein content has varied from 3.9 gms. per cent to 21.0 gms. per cent[13] with a variable albumin-globulin partition. The fluid is usually devoid of cells, but mature lymphocytes may be found. It has been reported[5] that the phospholipids and triglycerides are elevated over the corresponding serum values in these fluids, but this has not been our experience. The pleura is usually thickened and fibrotic. Chronic inflammatory cells are often found in the pleural specimens.

The clinical course is usually benign and is characterized by a tendency for recurrence of the effusion after thoracentesis. The diagnosis is generally easily established by examination of the pleural fluid. A pleural effusion containing cholesterol crystals or elevated cholesterol levels or both confirms the presence of a cholesterol pleural effusion. Because of the frequency of tuberculosis, an exhaustive workup for this disease is always indicated, and should include cultures of both the sputum and pleural fluid for acid fast bacilli. An extensive history of possible contacts with tuberculosis should also be obtained. Other pulmonary or systemic diseases including abnormalities of lipid metabolism should also be sought. Treatment usually consits of repeated thoracentesis, associated with general symptomatic care and specific treatment of any associated illness. Special care must be taken to avoid bacterial contamination of the pleural space by the numerous aspirations. Prognosis is primarily dependent on the response of the associated disease process to specific therapy. Because of the frequent association of this entity with tuberculosis, anti-tuberculous therapy may be of benefit. A definitive answer to this question must await reports of long term followups on patients receiving this form of therapy.

Table I summarizes the cholesterol and phospholipid values of serum and pleural fluid in 16 patients with pleural effusions of various etiologies collected by Hammarsten, Limes and Honska.[23] It is interesting to note that two of these (Nos. 3 and 16) had had their effusions for five and 13 years respectively and patient No. 16 also had pulmonary tuberculosis. Neither patient had markedly elevated values relative to their serum levels, however. To our knowledge, this is the only available data on the usual lipid content of pleural fluid. Contrasting these 16 patients with the three patients having cholesterol pleural effusions, one can see the difference in the relationship between the pleural fluid and serum lipid levels.

SUMMARY

Three cases of cholesterol pleural effusion are presented which are typical of most of the cases reported in the literature except

for the presence of rheumatoid arthritis in two of the three patients. This effusion is clinically characterized by its chronicity, the presence of cholesterol in high concentrations, a thickened fibrotic pleura, and frequent association with tuberculosis. The literature is reviewed and a discussion of etiology and pathogenesis is presented. There is now no evidence available to completely elucidate the mechanism of cholesterol deposition in the pleural fluid, but it is suggested that the frequent association with tuberculosis is secondary to the chronic pleural changes, and not a direct effect of the tubercle bacillus.

The authors gratefully acknowledge the assistance of J. F. Hammarsten, M.D., Chief, Medical Service, Veterans Administration Hospital, in this study. □

BIBLIOGRAPHY

1. Churton, T.: A Case of Double Haemorrhagic Pleurisy, Clin. Soc. Tran. 15: 19-26, 1882.
2. Cited by Apampinato, M. A.: Pleuresia Colesterolica, Prensa Med. Argent. 44: 3260-3263, 1957.
3. Cited by Lopez Sendon, J. L.: Pleuritis Colesterinica, Rev. Clin. Esp. 70: 106-109, 1958.
4. Shulman, M.: Pleural Effusion, Largely Cholesterol, J.A.M.A. 68: 1256, 1917.
5. Coe, J. E., and J. K. Aikawa: Cholesterol Pleural Effusion. Arch. Int. Med. 108: 763-774, 1961.
6. Sharpe, H.: Two Cases of Cholesterin Pleural Effusion. Brit. Med J. 2: 462, 1919.
7. Lyons, H. A.: Cholesterol Pleural Effusion, Dis. Chest 16: 495-500, 1949.
8. Evander, L. C.: Cholesterol Pleural Effusion, Am. Review Tuberculosis 54: 504, 1946.
9. Goldman, A. and T. H. Burford: Cholesterol Pleural Effusion: Report of 3 Cases With A Cure by Decortication, Dis. Chest 18: 586-594, 1950.
10. Durham, W. R. and S. Diamond: Cholesterol Pleurisy, Med. Bull., of Vet. Adm., 16: 12-15, 1939-1940.
11. Stein, H. M.: Cholesterol Thorax in Tuberculosis, Arch. Int. Med. 49: 421, 1932.
12. Frew, H. W. O. and C. Fowler-Campbell: Cholesterol Pleural Effusion, Practitioner 176: 416-419, 1956.
13. Curren, T. B.: Cholesterol Pleural Effusion, Edinburgh Med. J. 55 252-255, 1948.
14. Erwin, G. S.: Cholesterous Pleural Effusion, Brit. J. of Tuberculosis 35: 25-28, 1941.
15. Horler, A. R. and M. Thompson: The Pleural and Pulmonary Complications of Rheumatoid Arthritis, Ann. Int. Med. 51: 1179, 1959.
16. Weems, B. F.: Cholesterohydrothorax, Observations Upon A Case, Am. J. Med. Sci. 156: 20-30, 1918.
17. Moll, H. H. and F. S. Fowweather: Cholesterol Pleural Effusion, J. Path. and Bact. 51: 37-42, 1940.
18. Bole, G. G.: Synthesis of Lipids by Inflammatory Tissue, Clin. Res. 9: 241, 1961.
19. Haining, R. B. and R. G. Haining: Cholesterol Pericarditis, Ann. Int. Med. 54: 300-306, 1961.
20. Ehrenhaft, G. S. and R. E. Taber: Hemopericardium and Constrictive Peridarditis, J. Thoracic Surg. 24: 355, 1952.
21. Rahier, J. P. and J. Friart: A Case of Cholesterol Pleurisy, Bruxelles Med. 39: 1055-62, 1959.
22. Singer, E. O. and E. V. Whitby: Encysted Pleural Effusion Containing Cholesterin, Brit. Med. J. 2: 646, 1925.
23. Hammarsten, J. F., B. Limes, and W. L. Honska: Personal Communication.

Frederick D. Mannerberg, M.D.
800 N.E. 13th, Oklahoma City, Oklahoma

SEPTEMBER SYMPOSIUM ON ENDOCRINOLOGY

A symposium on the endocrinology of children and young adults September 26-28 is one of the important postgraduate offerings scheduled by the Medical Center during the 1962-63 season.

Seven authorities on endocrine problems will come here as guest speakers. They are: George F. Cahill, Jr., M.D., Department of Medicine, Harvard Medical School, Boston, Massachusetts; John D. Crawford, M.D., Department of Pediatrics, Massachusetts General Hospital, Boston, Massachusetts; Melvin M. Grumbach, M.D., Department of Pediatrics, College of Physicians and Surgeons, Columbia University, New York, New York; Robert Klein, M.D., Department of Pediatrics, Boston University School of Medicine, Boston, Massachusetts; Grant Liddle, M.D., Department of Medicine, Vanderbilt University School of Medicine, Nashville, Tennessee; Judson J. VanWyk, M.D., Department of Pediatrics, University of North Carolina School of Medicine, Chapel Hill, North Carolina, and Priscilla White, M.D., Joslin Clinic, Boston, Massachusetts.

Topics for discussion by guests and Medical Center participants include thyroid disease, reproduction, sex anomalies, diabetes, pituitary and adrenal problems, genetic influences in endocrine disease and others. □

A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries*

HARRISON HAYES, M.D.
MONTY ROTHENBERGER, M.D.
JOHN L. BOLAND, Ph.D.
E. M. GEORGE, M.A., M.D.

INTRODUCTION

THIS INVESTIGATION has been undertaken in an attempt to determine and evaluate any consistent similarities or differences in the clinical course and eventual rehabilitation of patients with brain injuries resulting from cerebrovascular accidents as compared to those resulting from traumatic head injuries.

Today cerebrovascular accidents and trauma constitute the two greatest causes of brain damage. In the United States more deaths are attributed to cerebrovascular accidents than to any other category of illness except heart disease and cancer.[8] Traumatic head injuries are becoming more and more frequent largely due to the increasing number of traffic accidents each year.

The cerebrovascular accident usually has one of three etiologies: thrombosis, hemorrhage or embolism. These occur in approximately a 13-to-six-to-one ratio. It has been postulated that emotional stress is a major factor in the development of the illness.[3, 9]

The prognosis of the patient suffering from a cerebrovascular accident depends on the type and extent of the injury, and on the presence or absence of complicating factors.[8] The resultant neurologic symptoms usually improve for several months and occasionally disappear completely. More often, however, residual defects ranging from slight awkwardness to total paralysis and aphasia persist indefinitely. There may be hemiplegia with or without sensory loss, or flaccidity may at first pervade the entire body.

Generally, paralysis is more complete distally with the upper extremity more severely involved than the lower. Muscle tone returns slowly, the extent of paralysis diminishes and the hemiplegia gradually becomes spastic in type. Language difficulties may be primarily expressive and/or receptive in character and include anomia, agnosia, agraphia, alexia or dysarthria.*

Severe traumatic head injuries are almost always accompanied by loss of consciousness. During the state of profound stupor urinary

*This paper was prepared by Harrison Hayes and Monty Rothenberger, in the summer of 1959, while National Foundation Student Research Fellows in Rehabilitation at VA Hospital, Oklahoma City. They worked under the direction of E. M. George, M.D., Chief, Physical Medicine and Rehabilitation Service and John L. Boland, Ph.D., consulting Speech Pathologist.

*Anomia—difficulty remembering names of objects
Agnosia—difficulty recognizing meanings of sensory impressions
Agraphia—inability to write
Alexia—inability to read
Dysarthria—disorder of speech, due to paralysis of muscles of articulation

incontinence is common. Following the period of restlessness and unpredictable violent behavior, traumatic confusion may be temporary or permanent. Hemiplegia may be present as well as ataxia and incoordination. Dysphasia is frequent for a time; conversation is sometimes possible but thought incoherent with lack of judgment and impaired memory for recent events.

TREATMENT

The many causes and degrees of severity of brain injury and sequelae make each individual patient a different problem in rehabilitation management.

Nature, size and site of the lesion are largely responsible for the duration and severity of sequelae. Since the combination of hemiparesis and dysphasia is a frequent one seen on a rehabilitation ward the discussion will be limited to the specific rehabilitation of an individual with these disabilities recognizing that the program must be varied for each patient.

Initially, medical and/or surgical definitive treatment will take precedence, but early institution of rehabilitation procedures will help establish the ultimate goal. A full rehabilitation program should include prevention of deformities, muscle re-education, training in self-care activities, ambulation and communication, as well as psychosocial and vocational adjustment.

Proper position in bed, early passive motion of joints through a full range and as the patient improves active exercises are essential in the prevention of deformities.

Muscle re-education is started as soon as voluntary movements are evident. Stress should be placed more on function of muscle groups rather than muscle power.

Self-care activities can usually be started at the time the patient is aware enough to assist in rolling over in bed. Sitting up, toilet activities, eating, dressing and use of a wheel chair are among the many activities necessary for the hemiparetic patient to learn for satisfactory daily living.

Ambulation training starts as soon as the patient is able to stand unassisted in parallel bars. Teaching heel-toe gait will help prevent clonus and establish more normal walking habits. A short-leg brace may be necessary to correct drop foot or stabilize the ankle.

Communication presents a difficult problem of rehabilitation. The goal in all cases is one of increasing the patient's ability to function in a communicating world.[6] Retraining in all language modalities—understanding, speaking, reading, writing—may be necessary. The success of these efforts will depend on the extent of dysphasia or dysarthria present and upon the severity of the generalized brain damage. Any program of speech and language therapy is apt to be a long tedious one, but the ability to communicate is a necessity in total rehabilitation.

The age of the patient will affect the vocational rehabilitation phase of the program. The patient may require training for a new job or retraining to perform his former job. In either case, the occupation must be one that he is physically and mentally capable of doing. The State Vocational Rehabilitation Division offers assistance to the disabled both in counseling and retraining.

Psychosocial adjustment will depend upon the extent of brain damage and upon the patient's progress in physical and psychological rehabilitation. Also, total adjustment will depend heavily upon family and community acceptance of the disabled person. Psychological counseling may be necessary to help in the adjustment of the individual towards work, family and social rehabilitation.

PROCEDURE

The clinical courses and subsequent rehabilitation of ten brain-damaged patients were considered in this study. All subjects were males between the ages of 25 and 45 at the time of their acute illness, and all were patients in the Physical Medicine and Rehabilitation Service, Veterans Administration Hospital in Oklahoma City. Five of these cases represented brain injuries caused by cerebrovascular accidents while the remaining five were injured traumatically. The information presented in the review of each case was gleaned from permanent records of Veterans Administration Hospital and from questionnaires sent to the patients inquiring about their current physical condition, social relationships and activities and

work record. Nine of these questionnaires were completed and returned.

The period of unconsciousness was considered as a rough index of the severity of the head injury, as suggested by Rusk.[8] The extent and type of paralysis and the communication deficit are used to indicate the initial physical condition of the patient. The patient's physical progress towards an independent existence was measured by the following criteria: the incontinence period, the length of time until self-care activities were begun, the period until walking without assistance was accomplished and the period until the upper extremity became functional. Personality changes during the acute illness were noted. Communication progress, family, work and social adjustment was stressed in evaluation of the case histories in an attempt to summarize the total rehabilitation of the individuals.

Due to space limitations only three cases in each category will be presented.

CASE #1: R. F.

DIAGNOSIS: Thrombosis of left middle cerebral artery.

HISTORY AND HOSPITAL COURSE

This 43-year-old male had a history of having an unhappy work situation, of being dominated by his wife and of headaches for five to six weeks prior to the CVA. At onset, a sudden right-sided paralysis and inability to speak developed. The right hemiplegia cleared rapidly. Within a month the patient was walking, doing self-care activities and his only residual was aphasia. He received speech therapy and occupational therapy which were designed to alleviate tension and hostile feelings. When he was discharged three months after his CVA, the patient had a severe anomia, but seemed to be slowly regaining some slight ability to read.

POST HOSPITAL REHABILITATION

The patient returned to his former job as a mailsorter and functioned adequately since speech was not required. To his wife he seemed restless, irritable and easily upset. She stated that he was resistive to making any improvement in his condition at home and that he was sexually maladjusted. This does not seem to be a change in his personality, but more of a continuation of former conflicts. About one year after the CVA, the patient suffered a grand mal seizure and was placed on Dilantin therapy. At present, 44 months after the CVA, he continues to work at the same job, though possible retirement may be facing him due to an expansion in scope of the job. He is still living with his daughters and his wife and is still dominated by his wife. He does all his self-care activities, but needs help in writing and has a very limited vocabulary. The patient feels that he is in about the same condition that he was when discharged from the hospital. Medication is still required to control seizures.

EVALUATION

This patient has done fairly well in work adjustment in returning to his former job in a sheltered situation, but has done poorly in family and emotional rehabilitation. Socially he has done better, belonging to some social organizations and having a few hobbies. The poor family adjustment and his continued language deficit are felt by the Social Worker to be partially due to the emotional conflict with his family.

CASE #2: B. M.

DIAGNOSIS: Left middle cerebral thrombosis.

HISTORY AND HOSPITAL COURSE

This 32-year-old male had a history of worry due to financial difficulties and of "sick headaches" which occurred two to three times per week before onset of the CVA. Initially there was motor weakness in the right arm and leg and in the tongue, with predominently expressive aphasia. He was in coma and incontinent of bowel and bladder for five days. After ten days be began to regain strength in the right arm and leg with good range of motion. Six weeks after the CVA he started on occupational, speech and physical therapy. At this time he was walking, performing self-care activities and

had active movements of all extremities. Three months after the CVA he was discharged to return to his former job. His only residuals at this time were articulatory difficulties and he was placed on out-patient status to return to speech clinic. Four months later, his speech was much improved and final discharge was made.

POST HOSPITAL REHABILITATION

Follow-up four years after the CVA reveals that the patient remained on his former job as delivery truck driver. He has returned to the status as head of his family and has made a successful adjustment in society. He feels that he has improved physically since he left the hospital and has had no illnesses. He states that he has some difficulty in spelling words, but does his own writing. His financial difficulties have been worked out through advice from the family-children service.

EVALUATION

In this case the rehabilitation progress has been excellent in all areas, and the patient has returned to society as a successful citizen.

CASE #3: A. P.

DIAGNOSIS: Thrombosis of the left middle cerebral artery.

HISTORY AND HOSPITAL COURSE

The patient was a 42-year-old male who had a history of worry over recent failure in starting a church and of being dominated by his wife. Initially after the CVA, he was noted to have a right hemiplegia and was unable to talk. The patient showed rapid improvement in muscle strength and movement on the right, with most of the paralysis disappearing early. He received treatment in Physical Medicine and Rehabilitation Service designed to aid in speech, coordination, ambulation and self-care activities. One month after the CVA the only residuals were moderate language impairment and slight paralysis in the right arm. He spoke in short halting sentences with episodes of nominal aphasia. Six months after the CVA speech was much improved and final discharge was made.

POST HOSPITAL REHABILITATION

Two years after the CVA he was living on a farm with a work-rental agreement and seemed to be adjusting to that life. His wife, with guidance from a social worker, seemed to be accepting the patient with his disability. Presently, four years after the CVA, the patient is working as a school custodian with help from his family. He is unable to write or read without assistance and has slight paralysis in the right arm. He feels that he has improved in general health and his speech is slowly improving.

EVALUATION

This patient and his wife have apparently adjusted themselves to his illness. He is well adjusted socially and has become a productive citizen, but requires some help in activities of daily living and on his job.

CASE #4: B. M.

DIAGNOSIS: Contusion of the brain stem and abductive paralysis of the left vocal cord.

HISTORY AND HOSPITAL COURSE

This 29-year-old white salesman was involved in an automobile accident on 12/18/55. He sustained multiple lacerations about the head and neck, bilateral pneumothorax and concussion of the brain. At another hospital a tracheotomy was done and on 12/30/55 he was transferred to VAH.

Upon admission he was still in an unconscious state. The tracheotomy site had become secondarily infected and fundoscopy revealed definite papilledema. There was paralysis of the right arm and left leg which was attributed to brain injury at the decussation of the pyramids.

During the first week only gradual improvement was shown. Sufficient consciousness had been regained by 1/4/56 that the patient apparently realized what was being said though still unable to respond. While at VAH he was incontinent for 24 days, and over a period of 15 days he intermittently hallucinated or was belligerent. Physical therapy began on 1/7/56, active movement was noted in all four extremities. About this

same time a speech examination showed that he was able to talk in short sentences without difficulty, but could not answer questions about his age or address accurately. This was interpreted as being symptoms of "mental confusion" rather than of true aphasia. By 3/6/56 his speech was "entirely adequate," and he was able to perform most self-care activities unassisted. Independent ambulation began on 3/23/56, though his gait was unsteady and incoordinate. At the time of discharge on 5/18/56 his strength had increased but was still subnormal. Some incoordination persisted in his gait and in bilateral and reciprocal movements. He spoke hoarsely due to the left vocal cord paralysis.

POST HOSPITAL REHABILITATION

At present this man lives alone and can perform without help all the activities of daily living including writing, reading and walking. Since his discharge he has worked as a farm hand, a taxi driver, a tax consultant, and is currently employed as a mail handler. He received training in accounting at a business college. He feels that his physical condition has improved since his discharge in that his coordination is better. He attends church each week and likes to dance.

EVALUATION

Although one receives the impression that this patient's post-discharge rehabilitation has been relatively complete from a physical standpoint, the variety of jobs he has held in a relatively short time leads one to suspect that his work adjustment has not been satisfactory. His social and family adjustment since leaving the hospital is also in doubt, for it is known that he was previously married yet he lives alone now. He apparently is not much of a burden on society, however, but rather is providing fairly adequately for himself.

CASE #5: T. M.

DIAGNOSIS: Contusion of the right frontal lobe with left spastic hemiplegia.

HISTORY AND HOSPITAL COURSE

This 37-year-old white oil-field worker was injured in an automobile accident on 8/19/56 and was treated elsewhere for multiple lacerations about the right side of his face and head. Three days later, he lost the ability to move the left side of his body. He had not regained consciousness when admitted to VAH on 9/5/56.

Upon admission this patient was semicomatose, and still demonstrated left-sided spastic hemiparesis. Pain sensation was intact on the left. Copious secretions in the throat and nasal pharynx were causing difficulty.

He was incontinent for 34 days after admission. He had fairly well regained consciousness by 9/23/56; from then until 10/29/56 his hospital course was a very restless one. Personality changes, represented by cursing and destructiveness were very much in evidence. He subsequently became well behaved, cooperative and cheerful.

By 10/10/56 he had active range of motion in the left lower extremity and was beginning to ambulate. There was marked spasticity with very little active movement in the left upper extremity. His dysphasic speech was fairly intelligible by 11/2/56, and coordination was slightly improved. On 1/11/57 he could ambulate with a permanent drop-foot brace and one cane. He was discharged on 1/25/57 with spasticity retained in his left arm. A final check-up on 7/9/57 revealed poor coordination and moderate spasticity present in both left extremities. He could use the left arm only when unaware of it and could do all self-care activities but was unable to carry on gainful occupation.

POST HOSPITAL REHABILITATION

The patient is presently living with his mother. He can bathe, shave and dress himself but requires some help in eating. He can read and write by himself although he is moderately impaired in all language areas. He has held no jobs since discharge, nor has he received any kind of training. With a cane he can walk alone but with difficulty, so he spends most of his time listening to the radio. He has noted no improvement in his physical condition since leaving the hos-

pital, does not participate in any social activity, and has no hobbies.

EVALUATION

This man seems to have made a poor adjustment to life outside the hospital. He is still relatively young yet, his inactivity gives one the impression that he lacks the motivation to help himself to ever again become gainfully employed. It is noted that he is now living with his mother whereas he was residing with his wife immediately after discharge. This fact leads one to suspect poor family adjustment as well as poor vocational rehabilitation.

CASE #6: B. L.
DIAGNOSIS: Contusion of cerebrum and brain stem.

HISTORY AND HOSPITAL COURSE

This 28-year-old male was involved in an automobile accident one week prior to admission. Initially he had marked spasticity in the left extremities. He was semiconscious for one week and incontinent in bowel and bladder function for five weeks. He passed through a period of depression and irrationalism. Three weeks after the accident the speech consultant felt that the patient was in a state of mental confusion, rather than being aphasic. He received speech, occupational and physical therapy. Within two months he was much improved with strength returning in the left extremities; self-care activities were started. Speech improved in articulatory accuracy. Seven months after the accident he was discharged with the only residual being a slowness in articulation of speech sounds.

POST HOSPITAL REHABILITATION

Four years after the accident, the patient is working as a manual laborer and is self-sufficient with few residuals from the accident. He attended an Adult Institute for one year to obtain highschool credits, but has not entered college as planned. He feels that his health has improved greatly and he has had no other illnesses. His only limitation is the inability to run or perform rapid movements in sports.

EVALUATION

This patient seems to have been successful in his attempt to return to society as a productive citizen. Family adjustment cannot be evaluated since he is living alone and is not married. Social and work adjustment has been made successfully.

CONCLUSION

The comparisons made in this study between the two groups of patients have revealed a number of differences in the rehabilitation progress of the two groups of brain injured patients. We feel that some of these differences are so striking that they can be considered generally valid for the typical case.

Significant findings are as follows:

1. The presence of psychological stress situation in the life of all of the cerebral vascular accident patient bears out the findings of some investigators who feel that emotional stress plays an important part in the etiology of apoplexia. Theories about psychological stress factors in the etiology of automobile accidents are well known, of course.

2. All of the cerebrovascular patients studied in this series developed a right hemiplegia with aphasia. While this is not the only combination of residuals found following strokes, it is common. The traumatic head injured patients showed a variety of paralytic patterns; their communication difficulties seemed to be caused more commonly by dysarthria or mental confusion rather than by dysphasia.

3. In general, going along with our postulation of the period of unconsciousness as an index to the severity of injury, the traumatically injured patients in this series were more severely involved with the period of unconsciousness averaging five weeks compared to an average of less than 24 hours for the cerebrovascular patients.

4. The accident victims required an average of eight weeks to regain bowel and bladder function after regaining consciousness, with the minimum period being three days and the maximum period being four and one-half months. As a contrast the cerebrovas-

cular patient regained these functions almost immediately after regaining consciousness.

5. Personality change proved to be significant in that all of the traumatic head injured went through a phase of psychotic behavior of some sort shortly after regaining consciousness. Conversely, none of the cerebrovascular patients experienced the same psychotic episodes.

6. The cerebrovascular patients were able to benefit from training in self-care activities much sooner than the traumatized patients.

7. The cerebrovascular patient learned to walk without assistance sooner after regaining consciousness than the traumatized patient.

8. Return of function of the upper extremity was rather sporadic and showed no group preponderance. The function did seem to return early or not at all. In most cases walking ability returned before the upper extremity function.

9. In general the traumatic patient required approximately twice as long as the cerebrovascular patient to recover sufficiently to be discharged from the hospital.

10. The prognosis for recovery of language skills was relatively good for all of the traumatic cases while only three of the cerebrovascular cases have recovered from their language deficits to any degree. This is consistent with the experiences of Rusk[8] in the rehabilitation of speech disabled patients.

11. The eventual social, family and work adjustment seemed not to be influenced by either the type or severity of injury but this seemed to depend more on the individual patient. Undoubtedly the family, social and work situation to which the patient returns affects his progress in these areas. □

BIBLIOGRAPHY

1. Brock, S.: Injuries of the Brain and Spinal Cord and Their Coverings, 3rd Ed., Williams & Wilkins Co., 1949.
2. Courville, C. B.: Pathology of the Central Nervous System, Pacific Press, 2nd Ed., 1945.
3. Ecker, A.: Emotional Stress Before Strokes, Ann. of Int. Med., Vol. 40: 49, 1954.
4. Grinker, R. R., Bucy, T. C.: Neurology, Charles A. Thomas Co., 4th Ed., 1951.
5. Gurdjion, E. S.: Mechanism of Scalp and Skull Injuries Concussion, Contusion and Laceration, J. of Neuro-Surgery, Vol. (15) (2): 125-128, March 1958.
6. Lofstrom, J. E.: New Concepts of an Old Problem, Stroke, Radiology, Vol. 70 (5): 871-873, May 1958.
7. Newmer, M.: Physical Medicine and Rehabilitation for Hemiplegic Patients, Radiology, Vol. 70 (5): 835, May 1958.
8. Rusk, H. A.: Rehabilitation Medicine, C. V. Mosby Co., 1958.
9. Seidenbergh, Psychodynamic and Arteriographic Studies of Acute Cerebral Vascular Disorders, Psychosomatic Medicine, Vol. 16: 324, 1954.
10. Stevens, H.: Spontaneous Strokes in Young, Ann. of Int. Med., Vol. 49 (5): November 1958.
11. Wright, I. S.: The Pathogenesis, Diagnosis and Treatment of Strokes, Ann. of Int. Med., Vol. 49 (5): 1004-1021, November 1958.
12. Wright, I. S.: A Profile of CVA Today, Gen. Pract., Vol. 19: 117-123, February 1959.

800 N.E. 13th, Oklahoma City, Oklahoma

ABSTRACTS

THE EVILS OF DRINK

Two patients who developed tonic and clonic convulsions, tongue biting, and incontinence as a result of massive water ingestion have been reported by Langaard and Smith.**

The appearance of grand mal-like seizures without obvious cause in these patients who were long-time inmates of a psychiatric hospital, precipitated a thorough investigation of the cases. It was noted that although no fluids were given, the patients voided large amounts of urine, one of them excreting 4800 ml. during the first eight hours. The serum sodium and chloride were initially markedly depressed, and their gradual rise was paralleled by the restoration of a clear sensorium. The possibility of diabetes insipidus was eliminated by measuring urine osmolarity after dehydration and the administration of pitressin.

When left to their own devices, it was noted that both patients took on gargantuan quantities of water, reaching 20 liters per day in one instance. That it is thus possible to exceed the homeostatic resources of the healthy body is herein well documented.

(REVIEWER'S NOTE: Most cases of intoxication are the predictable result of looking too long upon strong waters. There may be some perverse satisfaction for some in realizing that no guarantee of a clear head and a steady hand is to be had by joining those who sway through life atop the water wagon.)

** Self-Induced Water Intoxication Without Predisposing Illness. Hans Langaard and William O. Smith. New England Journal of Medicine 266: 378-381 (February 22), 1962.

BACILLUS RARA AVIS?

Listeria, a bacillus which is probably present far more frequently that it is recognized, can be responsible for a wide variety of infectious processes in man ranging from meningitis to endocarditis. Superficially, it resembles the normal diphtheroids of the throat and skin, and colonies grown on blood agar appear like those of streptococci.

Five cases have been observed at the University of Oklahoma Medical Center since 1957.* Two cases were manifested as meningitis, two as bacterial endocarditis, and the last was an infant with septicemia. Although four of these five patients died, with the exception of the infant, all were ill with other diseases, and the actual degree of virulence of Listeria is somewhat uncertain.

Since it may be found in such a variety of guises, there is no clinical syndrome which is pathognomonic. Further, agglutination studies of sera obtained from a group of 468 veterinarians showed the presence of Listeria antibodies in 77—none of whom had ever had any known infection with this organism. (Interestingly enough, none of the investigators working with Listeria in this study showed antibodies in their sera.)

Laboratory identification of the organism is not difficult, but it does require the bacteriologist to be alert, and to pursue the identification of any suspected culture beyond the routine morphologic and staining studies.

Since so little is known of the epidemiology of this organism in man, searching it out from routine cultures offers the best possibility for increasing our knowledge of it at the present time.

REVIEWER'S NOTE: Listeria is one of the bacilli capable of transplacental infection, whereby it may cause ante-partum death of the fetus, or the rapid demise of the new-born infant, even though the mother may have had no symptoms. How many abortions are caused by this organism is unknown. Because it is sensitive to several antibiotics, the potential fetal salvage provides a compelling reason for further study of its natural history.

*Listeriosis: Report of 5 Cases C. Camack Baker, Frances G. Felton, and Harold G. Muchmore. The American Journal of Medical Sciences 241: 739-743 (June) 1961.

SARCOIDOSIS

Ever since Hutchinson described sarcoidosis about three-quarters of a century ago, an active controversy has gone forward as to what it is, what causes it, and whether or not it even exists as a separate entity. As the disease (or syndrome) is becoming more frequently recognized, it is no longer regulated to the closet of medical curiosities, but is becoming the subject of considerable clinical and research effort.

Doctors Cummings and Hammarsten have presented a highly concentrated and orderly review of the topic including the epidemiology, pathogenesis, organ involvement system-by-system, diagnosis, and treatment, plus a number of ancillary facets which defy clear categorization.*

Those who are inclined toward the notion that tuberculosis may be the causative agent will take no comfort from this article, but neither are any of the other causes suggested (pin pollen, viruses, fungi, etc.) credited with any conclusive support.

The diagnosis of the disease can be facilitated if an enlarged lymph node or one of the skin lesions is available for biopsy. The Kveim skin test and electrophoretic examination of the serum proteins are also highly useful. It is clear, however, that being alert to the possibility of the disease and then searching it out is the prime requisite.

(REVIEWER'S NOTE: Although the certain diagnosis of this disease can be trying, the importance of distinguishing it from tuberculosis—for which it may be mistaken—has important therapeutic implications. The treatment of tuberculosis with corticosteroids is viewed with disfavor by most physicians, yet these drugs probably represent the best we have to offer a patient with sarcoidosis. The authors have collected and extracted the essence from almost 200 recent articles in the preparation of their own paper which they have held to a remarkably few pages. There is substance in every sentence.)

* Sarcoidosis. Martin M. Cummings and James F. Hammarsten. Annual Review of Medicine. Palo Alto, California: Annual Reviews, Inc., 1962. XIII, 19-40.

THE ROOT OF THE MATTER

The physician who hopes to correctly evaluate and adequately care for his patients should be as skillful in the elucidation of their psychologic and social problems as he is in his physical examination of them.* Not only must he learn to recognize such problems, but he must also be able to relate them to the patient's complaints and decide what likelihood there is of effective treatment.

In general, one looks for several relationships between the provoking situation and the symptoms of the patient. The symptoms should follow the stressful situation (or be closely connected with it), the association of these events should be reasonably consistent, and the relationship should be explicable in psychophysiologic terms.

If the physician is satisfied that the illness has an emotional problem as its basis, he must determine what are the possibilities for successful treatment, and whether or not he is capable of handling it himself. For the most part, younger patients whose illness is of short duration and who recognize the failure of their past attempts at adjustments have the best prognosis.

REVIEWER'S NOTE: These authors have long been contributors to the literature of psychosomatic medicine. Physicians who still look upon this area of medicine with great reservation will be encouraged by the attitudes of such workers who seek a solid physiologic footing for these sometimes perplexing complaints. While the article suffers from brevity, the short list of references will steer those interested to several excellent works of greater length.

*The Evaluation of Psychologic Factors in Illness. W. W. Schottstaedt and Stewart Wolf. Medical Clinics of North America 46: 859-864 (May) 1962.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Clinical and Laboratory Evaluation of Colistimethate Sodium in Gram-Negative Infections of Infants and Children. H. D. Riley, Jr., E. C. Bracken, and M. I. Abbott. Southern Medical Journal **54:** 1443, 1961.

Comparison of Direct Effects of Angiotensin and Other Vasoactive Agents on Small and Large Blood Vessels in Several Vascular Beds. F. J. Haddy, J. I. Molnar, C. W. Borden, and E. C. Texter. Circulation **25:** 239, 1962.

Detection of Tissue Fungi by Sulfation and Metachromatic Staining. J. W. Kelly, P. N. Morgan, and N. Saini. A.M.A. Archives of Pathology **73:** 70, 1962.

Disseminated Nocardiosis Involving Spinal Cord. J. D. Welsh, E. R. Rhoades, and W. Jacques. A.M.A. Archives of Internal Medicine **108:** 73, 1961.

Effects of Androsterone and Triiodothyronine on Serum Lipids and Lipoproteins, Nitrogen Balance and Related Metabolic Phenomena in Subjects with Normal or Decreased Thyroid Function, with Hyperglyceridemia and/or Hypercholesterolemia. R. H. Furman, and R. P. Howard. Metabolism **11:** 76, 1962.

Antibodies to Human Lung in Patients with Obstructive Emphysema and Pulmonary Tuberculosis. A. R. Hennes, M. Z. Moore, R. L. Carpenter, and J. F. Hammarsten. American Review of Respiratory Diseases **83:** 354, 1961.

Studies of Effects on Metabolic Balance and Serum Lipoproteins of Methylandrostane and Methyalandrostane Pyrazoles. R. P. Howard, and R. H. Furman. Journal of Clinical Endocrinology and Metabolism **22:** 43, 1962.

Extraction and Purification of Follicle Stimulating Hormone (FSH) from Ovine Pituitary Tissue. C. L. Cahill, R. W. Payne, and M. R. Shetlar, Federation Proceedings **20:** 175, 1961.

Scleropolycystic (Stein-Levinthal) Ovary with an Arrhenoblastoma of the Opposite Gonad. J. R. Betson, R. A. Marshall, and T. L. Chiffelle. American Journal of Obstetrics and Gynecology **83:** 93, 1962.

The Relationship of Flow to Pressure in the Intestinal Vascular Bed of the Dog. E. C. Textor, S. Merrill, M. Swartz, G. Van Derstappen and F. J. Haddy. American Journal of Physiology **202:** 253, 1962.

Reprints of the above publications are usually available on request from the senior author, c/o Mrs. Joan Campbell, Veterans Administration Hospital, 921 N.E. 13th Street, Oklahoma City, Oklahoma.

FACULTY NEWS

Hammarsten Goes To Minnesota

James F. Hammarsten, M.D., professor of medicine and VA Hospital Medical Service chief since 1953, resigned effective August 1 to return to Minnesota where he is now professor of medicine at his *alma mater*, the University of Minnesota Medical School, and director of medical service at Ancker Hospital, St. Paul.

Succeeding Doctor Hammarsten in the VA post is William O. Smith, M.D., associate professor of medicine and head of VA Research Service.

Doctor Smith, who received the M.D. degree at Harvard in 1949, completed his residency training at the Medical Center and joined the faculty in 1955. He formerly was associate chief of Medical Service.

Doctor Hammarsten has served on the Board of Contributing Editors of *The Journal* and since January 1 has headed the Editorial Committee for the Medical Center Section. David C. Mock, M.D., assistant professor of medicine, succeeds him in the latter capacity. □

Coston and Walker Named Clinical Chairmen

Two new clinical chairmen of departments, Tullos O. Coston, M.D., and Ethan A. Walker, M.D., have been appointed at the School of Medicine to serve during 1962-64.

Doctor Coston, professor and former vice-chairman, succeeds James R. Reed, M.D., professor, as chairman of the Department of Ophthalmology. He has been on the faculty since 1936. C. A. Royer, M.D., associate professor, is new vice-chairman.

In the Department of Otorhinolaryngology, Ethan A. Walker, M.D., assistant professor on the faculty since 1952, follows Lee K. Emenhiser, M.D., to the chairmanship, and James B. Snow, Jr., M.D., assistant professor, becomes vice-chairman.

Other new vice-chairmen: in the Department of Dermatology, Robert J. Morgan, M.D., associate professor; in the Department of Medicine, Robert M. Bird, M.D., professor; in the Department of Radiology, Gaylord Knox, M.D., associate professor. □

Two Clinical Investigators Named

Two young faculty members have been appointed to the select ranks of the Veterans Administration clinical investigators.

Beginning an investigatorship in surgery July 1 was David D. Snyder, M.D., who finished an appointment as chief resident in thoracic surgery here at that time.

The second appointee is Earl Ginn, M.D., named a clinical investigator in medicine last July while in New York. They are appointed for a three year period.

Both men hold the faculty rank of instructor. Doctor Snyder, a graduate of George Washington University School of Medicine, interned and took his first year of residency work at the University of Minnesota Medical Center, coming to the OU Medical Center in 1958. His preceptor will be Gilbert S. Campbell, M.D., Ph.D.

Doctor Ginn was graduated from Emory University School of Medicine, Atlanta, and completed his medical residency program at the OU Medical Center. He then went to New York as a USPHS fellow in renal physiology at the New York Hospital-Cornell Medical Center, returning to the Oklahoma City VA Hospital in January. His preceptor under the clinical investigator program is William O. Smith, M.D.

The investigatorships were created to encourage talented young physicians to supplement their knowledge and clinical skills with intensive research experience and to prepare especially qualified persons for VA careers.

Nominated locally, investigators are appointed by a national selection committee. There are 53 clinical investigators in the national VA system at present. □

William M. Parry, M.D., Will Head Urology Department

William L. Parry, M.D., associate professor of urology at the University of Rochester School of Medicine, will come here in September as professor and head of the Department of Urology and chief of the VA Hospital Urology Section.

Doctor Parry succeeds the late Donald W. Branham, M.D. He was on the faculty of the State University of New York Upstate College of Medicine, Syracuse, from 1954 until he took the Rochester position in 1961.

After receiving his M.D. at Rochester in 1947, Doctor Parry interned at Grace New Haven Hospital, Yale University Service, and took his residency work at Genesee Hospital and Strong Memorial Hospital, University of Rochester Service.

He was chief of the Urology Section, Warren Air Force Base, Wyoming, from 1952 to 1954 and then chief of the Urology Section, Syracuse VA Hospital until 1961.

Doctor Parry is a diplomate of the American Board of Urology. He is a member of Alpha Omega Alpha and Sigma Xi. □

32nd ANNUAL FALL CONFERENCE
of the
OKLAHOMA CITY CLINICAL SOCIETY

Sheraton-Oklahoma Hotel **October 29, 30, 31, 1962**

GUEST LECTURERS

RALPH C. BENSON, M.D., Obstetrics
JOHN W. DUCKETT, M.D., Surgery
EDWARD A. DUNLAP, M.D., Ophthalmology
EDWARD A. GALL, M.D., Pathology
WALLACE B. HAMBY, M.D., Neuro-Surgery
J. RAYMOND HINSHAW, M.D., Surgery
WILLIAM HOLLANDER, M.D., Medicine
OTIS F. JILLSON, M.D., Dermatology
VINCENT C. KELLEY, M.D., Pediatrics
CARROLL B. LARSON, M.D., Orthopedic
TED F. LEIGH, M.D., Radiology
HERBERT C. MODLIN, M.D., Psychiatry
EDMUND R. NOVAK, M.D., Gynecology
RICHARD J. REITEMEIER, M.D., Medicine
BEN H. SENTURIA, M.D., Otolaryngology
MR. J. ROGER DAES, Nationally Know Lecturer

Acceptable for 18 HOURS CATEGORY I CREDIT by The American Academy of General Practice

FIVE O.U. FRESHMEN RECEIVE OSMA SCHOLARSHIP AWARDS

The Oklahoma State Medical Association *officially* rewarded scholastic achievement on September 6th when five outstanding O.U. Medical School freshmen received the first scholarships to be awarded under the new OSMA Loan and Scholarship Fund program.

Receiving the $500 grants were Edward Gwin IV, Ada; John Junker, Edmond; Muriel E. McGlanery, Mooreland; John F. Schuhmacher, Alva; and William H. Smith II, Norman.

Presentations were made to the students by Walter E. Brown, M.D., Tulsa, during the regular indoctrination program for freshmen held in the medical school auditorium.

Doctor Brown is a member of the Oklahoma State Medical Association's Financial Aid to Education Committee, and was President of the OSMA when the financial assistance program was approved by the House of Delegates in 1961.

The five scholarship winners were actually selected last February 7th by the Financial Aid to Education Committee, which at that time was under the direction of Doctor Brown. In keeping with the directive of the 1961 House of Delegates, which designated the scholarships for the purpose of encouraging academic excellence, the committee selected the five highest-rated applicants for the 1962 class, based upon a comprehensive evaluation of their scholastic achievements and entrance examinations.

The records of more than fifty applicants were reviewed before the final selections were made. All applicants met or exceeded the minimum standard of a 2.0 premedical grade average.

With the presentation of $2,500 in scholarships to members of the 1962 freshman class, the OSMA completes the first phase of the implementation of its financial aid program. During the scholastic year 1962-63, other O.U. students will benefit from the loan and grant-in-aid phases of the program.

Over $8,000 Available

The OSMA Financial Aid to Education Program was set in motion at the 1961 annual meeting, upon the recommendation of the Council on Professional Education, which called to the House of Delegates' attention the declining quantity and quality of medical school applicants during recent years. To make the University of Oklahoma more competitive for the state's top talent, the Council said, a financial assistance program was necessary.

Delegates responded by voting a $5 per member increase in state association dues for the purpose of financing a scholarship, loan and grant-in-aid program for University of Oklahoma medical students.

The dues increase, effective January, 1962, has raised $8,433.74 during the current year. According to the House of Delegates directive, 60 per cent of the funds collected from the dues increase is to be allocated each year for loans, and 40 per cent is to be used for scholarships and grants-in-aid.

How It Works

Following the House of Delegates meeting, the Financial Aid to Education Committee was formed and assigned the responsibility of developing rules and regulations for the equitable disbursement and efficient administration of the funds.

The committee met on several occasions for this purpose, and, on May 5, 1962, received House of Delegates approval of its plan of implementation, which is summarized below:

General. The $8,433.74 collected during 1962 will be allocated to the three categories of financial assistance as follows:

$5,000 for Loans
$2,500 for Scholarships
$933.74 for Grants

These funds have been transferred to a University of Oklahoma depository account to the credit of "The Oklahoma State Medical Association Loan and Scholarship Fund." The Business Administrator of the University of Oklahoma Medical Center will serve without charge as the administrator of the funds, and will account to the OSMA Financial Aid to Education Committee on March 31st of each year for all amounts received and disbursements made.

Disbursements will only be made upon approval of the OSMA committee, as authorized by its chairman, and all checks will bear the imprint "The Oklahoma State Medical Association Loan and Scholarship Fund." The economical and expeditious arrangement with the O.U. Business Administrator is approved by the OSMA legal counsel, who prepared the legal document necessary to bind the agreement.

Scholarships. Five $500 scholarships will be awarded to the highest-rated Oklahoma residents who apply for first-year admission to the University of Oklahoma School of Medicine. Scholarship awards are based solely upon academic achievement, and are outright, non-refundable grants.

Each Fall, the Associate Dean of Student Affairs of the medical school will send scholarship applications to the more highly-rated students as

SMITH SCHUHMACHER McGLANERY JUNKER GWIN

they apply for admission. Since December 1st is the cutoff date for application, the OSMA committee will meet afterwards to review the credentials of the candidates and select the winners.

Scholarship winners will be announced immediately upon selection, but checks will not be presented until the student actually enrolls in the University of Oklahoma.

Loans. Loans are available to O.U. students throughout the four year course, on the basis of economic need. Application forms for an OSMA loan are available through the office of the Associate Dean of Student Affairs.

An individual student can borrow no more than $500 per year. Recipients shall be required to execute a note on a form approved by the OSMA committee and its legal counsel. Such notes shall be payable in three (3) equal annual installments, the date of the first being five (5) years after the note maker's graduation from the University. No interest shall be charged until one (1) year after graduation, at which time simple interest at the rate of 3 per cent per annum shall be charged upon unpaid balances.

Loans will be secured by life insurance, which will be assigned as collateral security to the depository. In the case of minors, an adult countersigner will be required.

Grants-In-Aid. Grants-in-aid are nonrefundable monetary awards to permit students to meet emergency situations of economic need. They are available to students of all grades in $50 to $100 amounts. Application forms are supplied through the Office of the Associate Dean of Student Affairs.

Repayment of grants-in-aid will not be demanded, nor will interest be charged. However, repayment will be accepted if the student later feels able to do so.

OSMA Committee

At the present time, the OSMA Financial Aid to Education Committee is comprised of the President, President-Elect and the immediate three Past - Presidents. The immediate Past - President, currently Clinton Gallaher, M.D., serves as chairman.

Other members of the committee are: J. Hoyle Carlock, M.D.; Peter E. Russo, M.D.; Walter E. Brown, M.D.; and, A. T. Baker, M.D.

The committee will report annually to the House of Delegates. Since the OSMA Loan and Scholarship Fund will grow by approximately $8,000 each year, it is anticipated that adjustments in operational policy will be necessary from time to time. □

Information Sought On Glass Injuries

Increasing numbers of deaths and serious injuries are being reported as a result of the extensive use of large panes of glass as a building material. Sliding glass doors have been identified as a particular hazard to children.

The OSMA's Safety Committee is presently considering recommended changes in the city building codes to require the installation of safety glass in new construction.

Physicians are urged to report such accidents to the OSMA. Send particulars to Box 9696, Oklahoma City. □

New Loan Fund Created For Medical Students

A $25,000 loan fund for University of Oklahoma medical students was announced July 18, 1962 by the Shepherd Foundation.

To be known as the "Shepherd Foundation, Inc. Loan Fund," the program is designed to assist deserving medical students in completing their education to become practicing physicians. Academic standing of the applicants is not a factor in the selection of recipients.

Students may borrow up to $500 a semester from the fund, and may accumulate a total debt of up to $4,000 during the four year course. Loans are payable two years after graduation, and shall bear two and one-half per cent interest from date of note.

The eligibility and qualifications of the applicant will be reviewed and approved by a board comprised of: Phillip E. Smith, Sc.D., the O.U. Associate Dean of Student Affairs; Frances P. Newlin, M.D., Vice-President of the OSMA; and Malcom E. Phelps, M.D., representing the Oklahoma Chapter of the American Academy of General Practice. Doctor Phelps was instrumental in the development of the program.

Applications are now being accepted in the Office of Student Affairs, and the board is expected to meet this month to make the initial loans under the program. A special trust fund has been created by the Business Administrator of the University of Oklahoma Medical Center, and $10,000 is already on deposit. An additional $15,000 will be transferred from the Shepherd Foundation to the loan fund depository next year. □

Three Group Insurance Plans For OSMA Members

Members of the Oklahoma State Medical Association are taking advantage of the quality coverage and reduced premiums offered to them through the association's three group insurance programs. A recent check by the OSMA executive office revealed that 412 physicians participate in the term life insurance program, 900 are insured in the disability income plan, and 225 have enrolled in the new overhead expense program.

Life Insurance

Massachusetts Mutual Life Insurance Company has underwritten the group term life insurance program since its inception in 1956. The 412 doctors participating in the program at the present time are insured for a total coverage of $6,682,500.

Since the program began, $352,000 has been paid out for 22 death claims.

OSMA members may select either $10,000 or $20,000 policies up to age 60. From 60-65, the risk is limited to $15,000, and from 65-70, the coverage is reduced to $5,000. The nominal rates also provide for waiver of premium (before age 60) in the event of disability as well as for double indemnity in case of accidental death.

New members who apply within 60 days after election to membership may obtain $10,000 protection without evidence of insurability. Additional amounts of insurance are obtainable on the basis of a satisfactory health statement.

As an example of the premium rates, a physician in the 40-49 age bracket would pay $105.30 for $10,000 protection. Moreover, claims experience was so favorable last year that renewal premiums were reduced by about nine per cent. There have been no deaths since last March.

Disability Income

C. L. Frates and Company, Oklahoma City, is administrator of the OSMA's group health and accident insurance programs, which include separate companion plans for disability income protection and overhead expense insurance.

The disability income program is underwritten by the Insurance Company of North America, and the overhead expense plan is carried by Continental Casualty.

Disability Income Insurance: This program features great flexibility, to the extent that a physician may individually select his monthly indemnity, his waiting period and his sickness benefit period.

The monthly indemnity option ranges from a minimum of $200 per month protection up to a maximum of $600 per month. Depending upon the option selected, the benefit period may commence on the first day of an accident and on the eighth day of illness; or, for a lesser premium, may be deferred to 30 or 180 days on both accident and illness.

Lifetime benefits are paid on disabling accidents, and physicians may select either a three-year or five-year benefit period on illness. In addition to the monthly indemnity, the coverage includes up to $5,000 accidental death and dismemberment benefits.

All OSMA members under age 70 are eligible for coverage under the disability income program, subject to evidence of insurability. Prior to the end of the initial enrollment period (June 15, 1961), all members under age 70 were eligible to apply, and impaired risks were guaranteed at least $200 per month protection.

Even now, new members of the OSMA may obtain at least $200 a month protection without evidence of insurability, provided they apply within 60 days of election to membership.

The few physicians who have not converted from the old OSMA disability income program (North American Accident Insurance Co.) to the new plan of the Insurance Company of North America have until November 1, 1962 to make the change without having to establish insurability.

Overhead Expense Insurance: The Continental Casualty program for Overhead Expense Insurance offers from $200 a month protection up to $1,000 a month, with either a 15 or 30 day waiting period.

This plan is especially designed to cover a physician's normal office expenses during periods of disability and is a valuable companion piece to the association's disability income insurance program. Overhead expense insurance premiums are tax deductible as a direct business expense.

Descriptive brochures on the OSMA's three group insurance plans are available from the Executive Office, P.O. Box 9696, Oklahoma City. □

Mass Sabin Polio Drives Urged in Fall

The Oklahoma State Medical Association's Council on Public Health is urging all county medical societies to initiate mass polio immunization programs in the Fall. Council Chairman Paul D. Erwin, M.D., issued the call to county presidents following the August 19th meeting of his group.

"As a public health measure, the mass application of Sabin offers a wonderful opportunity to eradicate polio," Doctor Erwin said, "and the project has tremendous public relations potential at a time when the profession needs all the goodwill it can muster."

Doctor Erwin's letter to the county medical society officers reminded them that the three manufacturers of the vaccine are well-equipped to offer assistance in the planning and conduct of mass immunization drives at the county level.

The capability of the manufacturers was revealed at the August 19th meeting of Doctor Erwin's Council, where representatives of Lederle, Pfizer and Wyeth Laboratories appeared and explained the project planning service which their companies offered.

All three organizations have produced "How-To-Do-It" manuals containing excellent instructions related

to the organization of mass polio drives, recruitment and assignment of personnel, purchasing and financing of the vaccine, and publicity campaigns. Staff personnel of the three companies are available to counsel physicians in the planning of such programs and to participate during the actual drives.

County presidents were asked by Doctor Erwin to conduct early meetings of their societies for the purpose of discussing sponsorship of polio immunization projects. Since a number of counties have already initiated action or are planning to, the letter was accompanied by a questionnaire to determine the present stage of implementation.

"The completion and return of the questionnaires will enable the OSMA headquarters to determine the level of immunization achieved in Oklahoma, and will furnish material for statewide publicity releases concerning the role physicians are playing in this public service project," Erwin said.

No State Plan

The Council on Public Health considered but rejected a proposal to conduct a statewide drive against polio under the auspices of the OSMA.

"The logistics of such a program would be difficult to manage," Doctor Erwin said, "and the OSMA would not want to impose its will upon the few county medical societies which might be recalcitrant." The Council decided the best course would be to encourage county society sponsorship at the local level.

Other Subjects Considered

In other actions at the August 19th meeting, the Council on Public Health reviewed projected plans of all committes under its direction.

Particular attention was focused on the Safety Committee, which has been assigned such projects as: an educational program on the value of automobile seat belts; a possible revision in the regulations governing the issuance of automobile licenses to handicapped persons; and, an investigation of the public health hazard of sliding glass doors.

The Perinatal Mortality Committee reported it had already launched an intra-professional education campaign designed to reduce mortality and morbidity to both mother and child (see below). □

Programs Offered On Perinatal Mortality

The Perinatal Mortality Committee of the Oklahoma State Medical Association was reactivated last March under the direction of chairman John R. Records, M.D., Oklahoma City. A major function of the committee is to provide programs designed to reduce perinatal mortality and morbidity of both the mother and her offspring.

County medical society officers were contacted by letter in July, and offered educational programs for county meetings or hospital staff meetings. Two types of programs are suggested:

1. Perinatal mortality and morbidity demonstration case conferences; patient material for these conferences to be derived from hospitals of other cities.

2. Educational programs concerning maternal and neonatal disorders and diseases.

The OSMA committee will furnish speakers and patient material for the meetings. It is hoped that many program chairmen will schedule the perinatal subject for the 1962-63 organizational year, for through such efforts may be realized the reduction in death rates and disabilities.

Joining the OSMA committee in approval of the project are the Academies of General Practice, Pediatrics, and Obstetrics and Gynecology.

Serving with Doctor Records on the committee are: George H. Garrison, M.D., Oklahoma City; Jacob Kay, M.D., Oklahoma City; Hall Ketchum, M.D., Tulsa; William McShane, M.D., Tulsa; Matthew Moore, M.D., Tulsa; Thomas C. Points, M.D., Oklahoma City; Elmer Ridgeway, Jr., M.D., Oklahoma City; and John W. Shackelford, M.D., Oklahoma City. □

American College of Surgeons to Convene In Phoenix

The American College of Surgeons will hold its first 1963 sectional meeting in Phoenix, Arizona, January 21-23. More than 450 surgeons from the southwestern area of the United States are expected to attend this scientific meeting to hear discussions on palliative management of patients with malignant neoplasms, treatment of multiple injuries, surgical complications during pregnancy, treatment of burns, hypothermia, present status of tissue transplantation, plus two "How I Do It" clinics on miscellaneous subjects, medical motion pictures, and scientific papers. Sessions will be held in the Hotel Westward Ho. All doctors of medicine may attend.

Speakers Named

Doctor MacDonald Wood, Phoenix, chairman of the advisory committee on local arrangements, and his Arizona committee have chosen outstanding surgeons from the mid- and southwest as guest speakers. Among those from other medical centers are Stanley R. Friesen, Kansas City; William P. Longmire, Jr., Los Angeles; Edwin B. Boldrey, San Francisco; Milton L. McCall, Pittsburgh; Carl A. Moyer, St. Louis; Curtis P. Artz, Jackson; Henry Swan, Denver. Doctor Loyal Davis, Chicago, president of the College, will preside at the Fellowship luncheon.

Multiple Injuries

Of special interest will be a two-part symposium on treatment of the multiple injured person. Speakers will discuss various phases of general management and coordination of care of the injured from the standpoint of all the specialties.

Other sectional meetings this year are Charlotte, North Carolina, February 11-13; Pittsburgh, Pennsylvania, March 11-14; Toronto, Ontario, April 25-27. This year, 1963, is the College's fiftieth anniversary year. The 1963 annual Clinical Congress will be held in San Francisco, October 28-November 1. □

Doctor Hart Conducts Attitude Survey

Recently, Doctor Marshall O. Hart, Speaker of the OSMA House of Delegates, conducted an association survey of delegates, alternates and trustees, for the purpose of determining weaknesses that exist in the conduct of the annual meeting, as well as to measure the attitude of those surveyed in regard to many aspects of the association's operation. Doctor Hart points out that once these weaknesses are discovered, the association, through a thorough analysis of the problems, can work toward strengthening the OSMA into an even more effective organization.

"To date, approximately 100 questionnaires have been returned," said Doctor Hart, "representing 47 towns in Oklahoma." This gives the association a fairly good sampling or cross section of the state, whereby, a reasonable analysis can be justly made.

Of the 11 questions asked through the survey, the House Speaker feels the most pressing problem is the inactivity of the county medical societies and the liaison between these societies and the state association. "This can and certainly should be improved," said Doctor Hart, "there is entirely too little understanding between the several levels of organized medicine."

In addition to questioning the group about the annual meeting, Doctor Hart also posed the questions:

1. What civic organizations are you a member of?

2. Do you have any suggestions for improvement of House of Delegates operation?

3. Would you like to attend Trustee's meeting? Would you attend if invited? Do you think you have time for a trustee's report? (Trustees meeting held day before delegates convene.)

4. Do you believe the leaders of our organization, President, other officers, trustees, delegates, speaker of the house, etc., should have any required qualifications? Or, is membership in the association adequate?

5. Too few of our doctors and county societies are actively participating in presenting or in discussions. Remedy?

6. Our reference committees are not well attended with active participation, what advice or suggestions do you have to offer as a remedy for this?

Doctort Hart feels, based on the survey answers, there is a conflict between the scientific meetings of our association, the House of Delegates and Trustees during the annual state convention and believes by investigating other state conventions, some helpful tips might be obtained. He further believes that responses to other questions indicate a need to make significant revisions in association operation.

Other answers to questions reflect in excess of 50 per cent have never served on an OSMA committee; 79 of the 110 respondents said they would serve on a committee if given the opportunity; and, when asked their opinion about a two-day meeting for the delegates, 57 said they favored a longer meeting and 45 did not.

Doctor Hart has transmitted his findings and recommendations to the OSMA President for further action.

County Officer's Conference Planned

For the first time in many years, the Oklahoma State Medical Association will conduct a statewide conference for county medical society officers. Scheduled to be held in Oklahoma City on October 28th, the meeting is generally designed to unify the various levels of organized medicine and, more specifically, to stimulate better coordination between the state association and county societies in the planning and conduct of effective public information programs.

Details of the program for the October event will be announced soon by the Council on Public Policy, which is now contacting speakers and preparing materials for distribution to county presidents and secretaries.

Efforts are being made to obtain a top official of the American Medical Association to present a keynote address on the national operation of the medical organization, with particular emphasis on federal legislative influence on the future of medicine.

Also included in the plans are a get-acquainted social hour and dinner for the state and county medical leaders.

The date of the conference was selected for its proximity to the Oklahoma City Clinical Society meeting which is set for October 29-31. Rex Kenyon, M.D., Chairman of the Council on Public Policy is coordinating the planning of the county officers conference. □

State Represented At AMA Institute

Rex E. Kenyon, M.D., Chairman of the Council on Public Policy, Don Blair, Executive Secretary, and Dwight Whelan, Associate Executive Secretary attended the American Medical Association's Public Relations Institute on August 30-31 in Chicago.

The annual event is staged by the AMA's Communications Division for the purpose of bringing together county, state and national public relations personnel for an exchange of ideas.

Theme for the 1962 meeting was "The Public Be — Served." AMA President George M. Fister, M.D., and Executive Vice-President F. J. L. Blasingame, M.D., led off the program by defining medicine's responsibilities to the public and explaining how they are being met by medical societies.

Those attending the conference gained useful project ideas to bolster medicine's public relations programs at all levels of activity. Also attending the meeting were Alma O'Donnell and William Best Thompson, M.D., representing Oklahoma County, and Jack Spears, representing Tulsa County. □

BOOK REVIEWS

FINANCING MEDICAL CARE, an Appraisal of Foreign Programs, edited by Hulmut Schoeck, The Caston Printers, Ltd., Caldwell, Idaho, 1962, pp. 314. $5.50.

Fifteen European and Australian scholars have contributed critical analyses of medical care in their respective nations. The medical economics of six European nations and Australia are reported and discussed from the viewpoint of economists, journalists, physicians and theologians. The history of relations between governments and the medical profession is outlined and the impact of compulsory medical coverage on the psychology of the sick man is reviewed. The editor's argument reveals him to be a cogent and convincing antagonist of compulsory "insurance" who labels it "the irreversible experiment."

Since current conditions have unintentionally cast American physicians in the role of guardians of one of our basic human freedoms, we are duty bound to study medical economics. Then we physicians may be able to discharge our moral responsibility to prevent the psychological subjugation of the sick by the cold, heavy hand of government. This book contains a wealth of factual material about the actual operation of a variety of government-controlled programs and it brings out that the problems generated are more burdensome than the problems solved. Compulsory programs are shown to be inflexible and to adapt poorly to medical and economic progress. Doctor Schoeck points out that the compulsory insurance concept was developed to meet problems of seventy years ago and is not appropriate for the economic situation of the Western World today.

It would seem mandatory that every person concerned with the medical scene today should study this volume and harken to its message so that a rational and moral solution to the current conflict can be reached. Every legislator and physician should digest this information before embarking on a course of action to solve medico-social problems.—*Ray V. McIntyre, M.D.* □

DR. MARY WALKER, by Charles McCool Snyder, Vantage Press, Inc. New York 1, New York, 1962, pp. 166, $3.95.

This small well-documented volume is a readable biography about an uncompromising, purposeful, and egotistical individual. Though she was an international figure in her early days, it was more her personality than fate that prevented her name from being as well known now as Susan B. Anthony or Amelia Bloomer. Doctor Walker should be remembered for having received the Congressional Medal of Honor for her service with the troops during the Civil War. President Andrew Johnson awarded the Medal in 1895, but in 1917 when Doctor Walker was 85 years old, the Board of Medal Awards ruled it unwarranted. In keeping with her character, Doctor Walker did not return her medal.

This volume is probably of interest mainly to those whose interest, like the author's, are "devoted to the byways of American history. . . ."—*Bertha Levy, M.D.* □

Pamphlets Available From OSMA Office

OSMA headquarters has extra quantities of waiting room literature which may be ordered without charge by physician members.

Despite the defeat of King-Anderson type legislation for this session of Congress, the topic is still widely discussed and two useful AMA publications on this subject which are available are "Health Care for the Aged" and "It's Your Decision."

An excellent graphic presentation of the favorable comparison of health care prices with the cost of living index is explained in "The Cost of Medical Care," also available. □

ADMISSION BY PHYSICIAN ONLY

A Distinctive Atmosphere in A Setting of Elegance

Irene's NURSING HOME

THE HALLMARK OF EXCELLENCE IN CHRONIC and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City

CE 2-8091 CE 2-7853

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

Miscellaneous Advertisements

WELL EQUIPPED CLINIC, rent free, in Ringling, Oklahoma. X-ray machine for sale. Will either sell or loan other equipment, or will vacate the offices. Fine school and churches. Present physician leaving to take further training. Contact W. J. Moore, Moore Drug, Ringling, Oklahoma.

FOR SALE: General practice office, fully equipped. One partner taking further training, the other retiring. Contact Agnew A. Walker, M.D., Wewoka, Okla.

PHYSICIAN WANTED: Unopposed, prosperous territory, modern city of about 3,000. Quitting because of age and health. Well-equipped office. Good hospital nearby. May be paid off in small monthly payments. Contact J. S. Jacoby, M.D., Bank Building, Commerce, Oklahoma.

FOR RENT: one office and four treatment rooms. Share reception room and laboratory with urologist and pediatrician (one receptionist). Near Wesley, Mercy and St. Anthony Hospitals in Oklahoma City. Twelve doctors in building which was built in 1954. Contact C. L. Casebeer, M.D., 5700 N.W. Grand Blvd., Oklahoma City. Phone WI 6-6729.

FOR SALE: Maico audiometer, four years old. Good condition, both air and bone conductor. Call or write: C. A. Pavy, M.D., 2132 East 25th Street, Tulsa, Oklahoma. RI 7-1165.

FOR SALE: General practice for one or two doctors in town of 2,800. Two man clinic grossing $70,000 per year, but could be much higher doing own surgery. Modern, air conditioned officers, x-ray, physical therapy. Eighteen bed community hospital with complete laboratory. One doctor is taking residency and other is taking position with Atomic Energy Commission. Will introduce over extended period. Contact W. A. Geiger, Jr., M.D., Fairfax, Oklahoma.

FOR SALE: 100x100 Profexray. Excellent condition with fluoroscopy tilt table, developer tank. Complete—$1,500. Contact Elton W. LeHew, M.D., or Phillips R. Fife, M.D., Guthrie, Oklahoma.

BOARD ELIGIBLE surgeon desires solo opportunity or group association; 32 years old; available July 1, 1963; contact Harvey B. Koch, M.D., 202 North Taylor Street, Apartment #1, Little Rock, Arkansas.

EXPERIENCED registered laboratory, X-ray technologist, nurse with experience in hospital administration. Available July 15. Phone LA 8-7932, 4150 Druid Lane, Apt. 8, Dallas, Texas.

ESTABLISHED GENERAL practice in Lawton with two associate to alternate on call. Completely furnished office if desired. Contact William A. Matthey, M.D., 807 Pershing Drive, Lawton, Oklahoma.

SURGEON, age 40, married, graduate of Geneva University, Geneva, Switzerland (1951), Board Certified, wishes to locate in Oklahoma, contact Mohamed S. Saydjari, M.D., 132 West Division, Barron, Wisconsin.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

FOR RENT: beautiful, air-conditioned, ground floor office, 631 N.W. 10th, Oklahoma City. Off-street parking, complete equipment optional. Contact Mrs. Neil Woodward, 4301 North Lincoln, Oklahoma City. JA 5-7028.

HOUSE STAFF PHYSICIAN Wanted: St. Francis Hospital, Tulsa, desires physician to work half-days 4 days per week, round-the-clock on 5th day. Salary $8-900 per month. Contact W. D. Hoover, M.D., Pan American Building, Tulsa.

OSMA JOURNAL / *death*

W. KELLY WEST, M.D.

1890-1962

One of Oklahoma City's prominent orthopedic surgeons, W. Kelly West, M.D., died August 6, 1962 in Seattle, Washington.

A graduate of the University of Oklahoma School of Medicine 1915, Doctor West had practiced in Oklahoma City for more than 40 years. He had been called the "father of orthopedic surgery" in Oklahoma.

Professor of orthopedic and fracture surgery at the University of Oklahoma School of Medicine since 1919, Doctor West had devoted much time toward the medical center and its program for training specialists in bone and fracture surgery. He was instrumental in founding the state's only school of physical therapy at the medical center.

In addition to his activities in local civic and medical groups, Doctor West served as president of the Southern Medical Association in 1957-58.

He was certified by the American Board of Orthopedic Surgery.

Our plan to continue covering the ABC's of Auxiliary committees and projects this month has "gang aft." Instead, we have a new addition, an extension, a congratulatory note, and an announcement. In truth, Auxiliary news sounds almost obstetrically-slanted this month.

Several times last year we called your attention to the fine work being done by the Christian Medical Council and other agencies, recommending that, as a community service project, you work with your local churches on collecting textbooks, drugs, and all sorts of supplies. We all expressed admiration for the work of the many doctors, often accompanied by their wives, who were and are serving on volunteer medical missions to foreign countries.

Now we have the announcement that a new national committee, International Health Activities, was voted at National Convention to become a standing committee in our Auxiliary work. Mrs. Milton L. Berg, our State President, writes as follows: "The program of International Health Activities is service to a world-wide medical community through active and graphic projects. We are very fortunate in having Mrs. Ceylon S. Lewis, Jr., 3747 South Wheeling, Tulsa, serve as our first State Chairman. Both Doctor and Mrs. Lewis have been working in this field for over two years and served on a volunteer medical mission to Miraz, India, last fall."

Complete instructions and information for forming this new committee have been mailed to each County President, and we wish great success to Mrs. Lewis in introducing this new phase of Auxiliary work.

The extension mentioned is a request from our Community Service Chairman, Mrs. James Loudon, P.O. Box 1824, Shawnee. The Oklahoma State Medical Association has asked the Auxiliary to sponsor the essay writing contest of the Association of American Physicians and Surgeons. As our own President says, "The Association does not often ask us to participate in special projects, and we know that every county auxiliary will want to follow through on the essay contest."

Doctor J. Hoyle Carlock, Jr., has stated that the OSMA will be willing to contribute $250.00 in prize money. He feels that the County Societies will also want to contribute prize money, if approached by their Auxiliaries. What better joint project is at hand? You will receive all information for the essay contest from Mrs. Loudon.

Our congratulatory note is to Mrs. William R. R. Loney, Editor, and to Mrs. James B. Thompson, Co-Editor, for their "first" edition of the *Sooner Physician's Wife,* published in Tulsa. They asked for comments, and we have one to make: Thank you for your contribution to our Auxiliary; we all appreciate your time and effort. If, by any chance, you did not receive your copy, drop a card to Editor, 2440 East 26th Place, Tulsa 14. We note the deadline date for the next issue is November 1.

The announcement is: Annual Fall Conference, October 29, to be held in conjunction with the 32nd Annual Fall Clinical, October 29 through 31, in Oklahoma City at the State Medical Building. All State Officers and Chairmen, County Presidents and Chairmen, Members-at-large, and the general membership are invited to attend. This is our opportunity to meet each other, beginning at 9:00 a.m. with a social hour; to exchange ideas and learn what we can accomplish together this year at the general meeting at 10:00 a.m.; to talk over things informally, luncheon at 1:00. Let us all start our year with abundant interest and excellent attendance. □

Annual meeting plans are underway for 1963. All events are scheduled for Tulsa's Mayo Hotel, May 2-5: The Board of Trustees will meet Thursday, May 2; Delegates will convene Friday; and, scientific sessions will run Friday through Sunday noon. President's Inaugural Dinner-Dance is set for Saturday night, May 4. General Chairman, Donald L. Brawner, M.D., Program Chairman Howard A. Bennett, M.D. and their committees are at work selecting speakers for a program format which will generally correspond to the successful 1962 conference.

A study committee has been appointed by President Carlock to re-evaluate established concepts of the OSMA state meeting. Competition with national meetings, changing characteristics of the medical profession and other factors warrant a hard look at the stereotyped approach to the state event. A seasoned group of former annual meeting planners, under the direction of 1961 Chairman C. S. Lewis, M.D., Tulsa, will make the study and report to the Board of Trustees on May 2nd.

Oklahoma Hospital Association has studied hospital charity care as operated by county governments. Twenty-one of state's 77 counties have county hospitals and levy a one-fourth mill tax for charity cases, inadequate to cover year's operation. Variation in county programs is terrific. Samples: Tulsa County pays $18 per day; Adair has no appropriation; Okmulgee, Pontotoc and Payne pay $10 per day; Pottawatomie has maximum of $25 per case, and Carter limits liability to $50 per case; Kay County pays $6 per day and 75 per cent of extra charges.

Don't let down on Social Security health care fight—your opponents aren't. To limber up for next year's onslaught, advocates of King-Anderson type legislation are pressurizing various minority groups, such as the National Medical Association. The 4,000-man group, long a supporter of AMA policies, yielded to pressure on August 16th, reversed its field and endorsed health care through Social Security.

Drug manufacturers, under Congressional fire over the thalidomide incident, are pointing out that the product was thoroughly tested in both Europe and the U.S., but that no known tests in animals could have predicted the alleged effects on unborn children. New federal regulatory power of the industry is a doubtful remedy, and may hamstring medical research. As *The Times* of London stated on August 1, "The evidence hardly favours the view that central government testing is likely to be an improvement. It was not a safeguard in Canada, Sweden, or France . . ."

Surveying sixty-six medical schools, the Association of American Medical Colleges reports that 4,951 students out of a total enrollment of 24,615 were receiving loan assistance in 1961. Average loan per student for the year reported was $610. (The study did not cover loan funds offered by agencies and medical societies working independently of the schools.) Projected to the nation's 81 schools, the total dollar outlay for loans for 1961 would be about $3½ million.

Gallup Poll . . . Public support of the Social Security approach to health care of the aged continues to drop, according to an August 21st Gallup poll report. The latest poll shows that 44 per cent of the public prefers Social Security financing and 40 per cent prefers private insurance. In April, the percentages were, respectively, 55 per cent and 34 per cent, and in July, 48 per cent and 41 per cent.

MEETINGS

October 15-19	American College of Surgeons, Atlantic City, New Jersey
October 29-31	Oklahoma City Clinical Society, Sheraton-Oklahoma Hotel
November 25-28	AMA Clinical Meeting, Los Angeles, California

NEWS LETTER

OKLAHOMA STATE DEPARTMENT OF HEALTH
OKLAHOMA CITY, OKLAHOMA

September 1, 1962

THE PHYSICIAN'S ROLE IN ACCIDENT PREVENTION

The physician has a role as teacher, healer, comforter, family consultant, community leader, and epidemiological investigator in Accident Prevention.

In Oklahoma, the accidental death rate is approximately 65.8 per 100,000, or nearly 15% higher than the national accidental death rate. Accidents sap Oklahoma's economy by approximately $232,000,000.

Many avenues and challenges are open to the physician in preventing accidents. There is the challenge of accident epidemiology, of teaching prevention, and reducing disability in patients under his care.

Accidents occur more frequently among the very young and the very old than among other age groups. Likewise, these groups are seen more frequently by physicians, thus affording the opportunity for advice about mental or physical conditions requiring special precautionary measures.

The handling of the injured is another serious problem confronting us. A study made by Dr. George Curry for the American College of Surgeons revealed that 3 out of every 10 victims can expect emergency handling that is only fair to poor. This means that every day thousands of persons can expect--in their moments of greatest peril--as much harm as help in the ambulance transportation that is supposed to save their lives.

Physicians and health departments have joint opportunity to provide improvement in care and handling of the injured. This can be done by providing widespread first aid education for all drivers and attendants, by improving rescue services, by providing better care in the emergency room, and by refining the skills of first aid and other emergency personnel.

(A SUPPLEMENT TO THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION)

The JOURNAL of the Oklahoma State Medical Association

OCTOBER 1962
Vol. 55/No. 9

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
J. W. MURPHREE, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

Mass Immunization 401
It's the Voter's Choice 402
President's Page 403

scientific

Tympanoplasty by Free Vein Graft, A Preliminary Report of Sixty Cases, *Ethan A. Walker, Jr., M.D., F.A.C.S.* 404
Severe Drug Reaction with Bone Marrow Depression Due to Mesantoin, *John A. Lupas, M.D.* 409
Report on a Case of Macroglobulinemia and Cryoglobulinemia, *Charles E. Cook, Jr., M.D.* 412
Heart Page, *Loyal L. Conrad, M.D.* 417

medical center

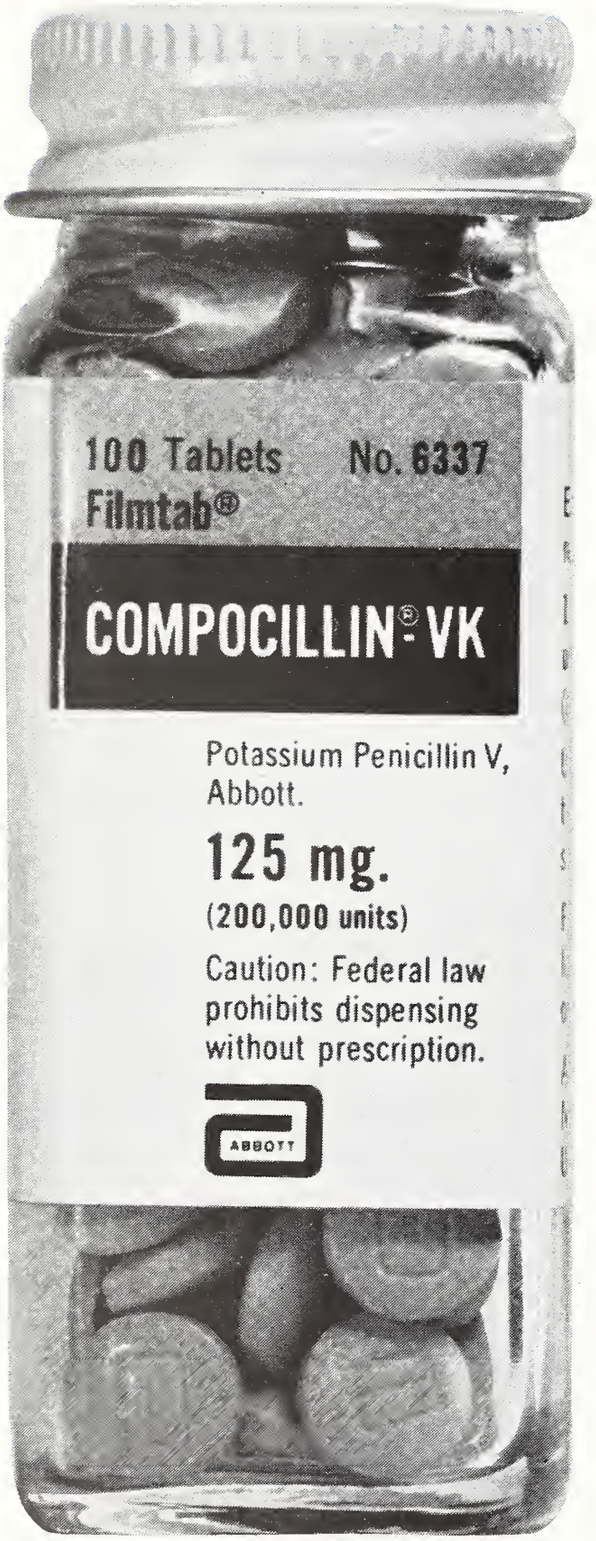
Dean's Message 418
The Management of Traumatic Amputations, *Don O'Donoghue, M.D., G. Rainey Williams, M.D., Gael R. Frank, M.D. and David D. Snyder, M.D.* 419
Applanation Tonometry, *Wm. H. Garnier, M.D.* 421
Cryotherapy: A Review and Evaluation, *O'Tar Norwood, M.D.* 424
Abstracts 426
Faculty News 427

news

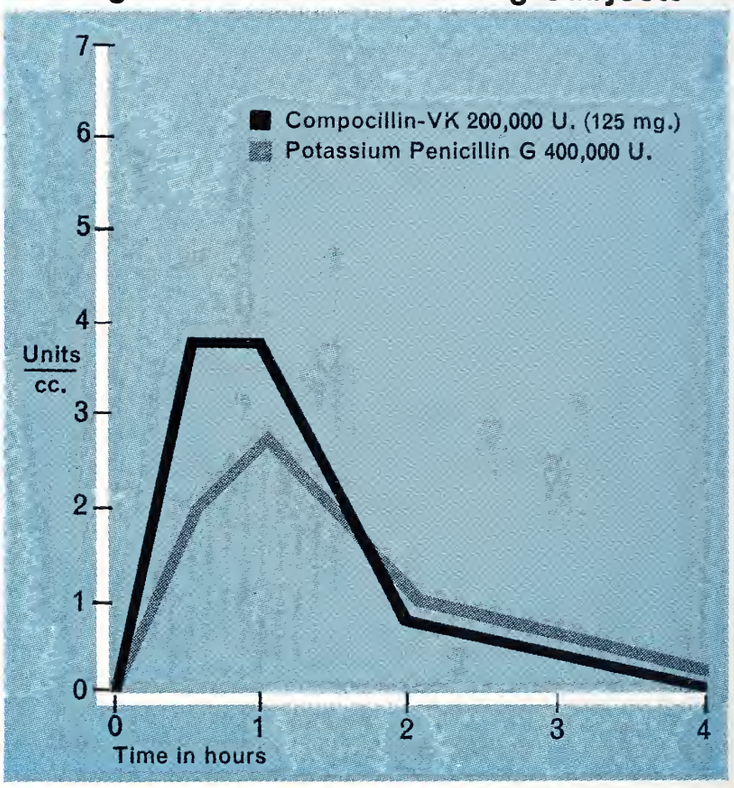
Conference of Medical Society Officers Announced . . 428
Kerr-Mills Program Expansion Approved by House of Delegates 429
Seat Belts Save Lives 430
Oklahoma City Clinical Society to Meet 431
State M.D.'s Oppose Compulsory Social Security Coverage 431
Ob-Gyn Board Preparatory Course 431
Annual Meeting Plans Underway 432
Pediatric Colloquy To Be Held in Tulsa 432
A.M.A. To Meet in L.A. in November 432
Diabetes Week: November 11-17 433
OSHA Honors Nine Volunteers 433
Letters 434
Deaths 435
Miscellaneous Advertisements 436
Index to Advertisers 1
Auxiliary li
The Last Word lii

Here's a penicillin that gives you...

PATIENT ECONOMY WHEN YOU WANT IT



Single Oral Doses to Fasting Subjects*



Consider milder bacterial infections

An example might be a respiratory infection. Here economy could be a definite factor in your thinking. In the chart above, you'll see that 200,000 units (125 mg.) of Compocillin VK produces blood levels at least equal to those obtained with 400,000 units of oral penicillin G potassium. This means that in less severe infections, Compocillin-VK may be given at *half* the dosage needed with oral penicillin G—with no sacrifice in blood levels. In these cases, the cost of Compocillin-VK therapy will be no more—and often will be less—than treatment with oral penicillin G.

Compocillin-VK—the original potassium penicillin V • In Filmtab (125 and 250 mg.) and cherry-flavored Granules for Oral Suspension

Filmtab—Film-sealed tablets, Abbott: U.S. Pat. No. 2,881,085

Mass Immunization

WITH THE recent defeat of the King-Anderson legislation, the medical profession has apparently relaxed and no publicity is being given to a bill that has passed the House and threatens to pass the Senate at any moment, HR 10541, entitled the Vaccination Assistance Act of 1962.

This little bill slipped by the AMA and won its endorsement in spite of its Legislative Committee's recommendations. It was not even acted upon officially by the Academy of Pediatrics and in any state with a politically inclined director of health may be the beginning of removing all immunizations from the physicians' offices into the public health clinics and health department of that state.

This bill provides an average of $14,000,000 a year for the next three years to the Surgeon General, to allow him, upon the call of the State Director of Public Health, to set up and operate mass immunization campaigns for diphtheria, tetanus, whooping cough and poliomyelitis, whenever a survey of the population shows that these immunizations have fallen below an arbitrarily determined safe percentage of the population.

These diseases are not even national problems. The latest figures available (1959) show 87 deaths from polio, 37 deaths from diphtheria, 263 from whooping cough and 99 from tetanus. As physicians, of course, we favor immunizing the population and have supported compulsory immunizations. Also, we can point out the fiscal irresponsibility of spending $14,000,000 to protect a small segment of our population against a group of illnesses that are virtually disappearing under existing programs.

Obviously the need in this area is for further and continuing public education which the Federal Government is already empowered to do, through the Surgeon General's Public Health Service Act, Section 315. We as doctors, of course, need to encourage our local and state health departments, through the local and state Medical Societies, to provide this information to the public in a continuing form. The Oklahoma State Medical Association has approved such a resolution and will begin implementing it shortly.

Mass immunization programs also have other dangers. The announcement of the program is frequently many months before its culmination and many people will undoubtedly wait for free vaccine, thus increasing and not decreasing the susceptible population. Two of the three vaccines, do not lend themselves to a mass immunization program. Diphtheria and whooping cough vaccines are currently not of sufficient safety to allow them to be given to children on a mass basis, without previous screening as to reactions.

This is a patently political attempt to capitalize on the popularity of mass immunization campaigns initiated by local medical societies against poliomyelitis, with a program that is unnecessary, a waste of money, an ineffective method and a danger to our patients. So far, no one on the national scene, has had the courage to see this program for what it is and speak out against it. □

/s/ JOHN C. KRAMER, M.D.
Chairman—Committee on
Medical Care Plans
Oklahoma Chapter
American Academy of Pediatrics

At this writing, HR10541 has been passed by the Senate Labor and Public Welfare Committee, without publ'c hearings, and is expected to receive favorable attention by the Senate before adjournment.
H.R. 10541 passed the Senate on October 4th and is now awaiting President Kennedy's signature.

It's the Voters' Choice

ATKINSON or Bellmon, Crawford or Monroney, Democrat or Republican, what difference does a single vote make?

This country has grown so large that most individual opinions are no longer of much consequence or so it may appear to a busy doctor when he considers an election. There are house calls, hospital calls, office calls and a dozen other pressing things to do which seem to be of greater importance than standing in line to vote at the polls.

The pitiful smallness of one vote out of 100,000 or 1,000,000 makes the effort to stamp a ballot seem wasted and there is the possible secret humiliation of voting for a losing candidate. Some people say that their vote is "lost" when their chosen candidate is not elected.

Let's look at it another way. About 2,000 doctors practice medicine in Oklahoma. Their neighbors consider them among the leaders in their communities. There are also about 2,000 Oklahoma doctors' wives and probably 9,000 of their employees. If the doctors themselves, their wives and their employees alone made it a point to vote at least 13,000 "medical profession" votes would be counted in any Oklahoma election. The effects of these community leaders' attitude toward voting would not go without notice.

If every doctor's wife assumed the responsibility for getting five other people to vote 10,000 more ballots would be cast. Every doctor's wife knows at least this many women who do not vote whether because of inertia, absence of encouragement or lack of transportation and they usually have a solution for such problems.

On paper we have accounted for about 23,000 votes so far but there are more!

Many medical employees' spouses genuinely haven't time to vote because of transportation problems but a well placed hour (or even half day) off to vote for the couple should produce 4,000 more votes. In addition if each medical employee were assigned to get at least one other person to vote the tally would rise by another 9,000.

Add 4,000 more votes if every doctor during the course of his daily medical chores could see to it that at least two of his patients go to the polls.

Like nail soup, the project could grow by leaps and bounds. At least 40,000 votes in Oklahoma this year would be assured by the *vote, support* and *proper encouragement* from Oklahoma doctors.

Politicians realize that when most of the registered voters vote, the man who is elected has a course cut out for him as it was intended in a democracy. Public servants who are elected by a small fraction of an area's voting potential assume office without a "vote of confidence." They have no mandate to underscore their campaign statements so they use their own judgment which is sometimes good and sometimes bad.

The complacent, "Let George do it" attitude toward any election invites catastrophe. Good ole' George is happy to do as much as he can for his compatriots but he can vote only for *himself*.

The American privilege of casting a secret ballot to elect public officials is almost two hundred years old. The new has worn off but the stern realities of everyone's responsibilities as a citizen remain and the greatest responsbility is to stand up and be counted particularly by expressing an opinion by vote at every election.

Usually nothing worthwhile is gained by blind group voting. The "medical" group, the "labor" group, the "farmers" group and the "teachers" group are convenient journalistic phrases which should be meaningless. Nearly every registered voter has some idea of his own regarding current issues and candidates for public office. We are extremely fortunate to be able to express these ideas by secret ballot and still more fortunate that when the majority of a voting community registers their honest feelings at the polls the average is usually right.

We are not campaigning for any candidate or any party. Instead we are campaigning for the principle that every United States citizen is morally obligated to exercise his voting franchise. The idea is not unique but the problem of the lazy voter is chronic, progressive and the medical profession is duty bound to help by encouraging everyone to vote.—*C. B. D.* □

The State Medical Association will inaugurate this month a further attempt to establish effective liaison in Oklahoma between the three echelons of American Medicine. Representatives of the national, state and county levels will meet for an interchange of experiences, programs and future plans see article, page 428.

Rex E. Kenyon, M.D., capable chairman of the OSMA Council on Public Policy, has arranged the agenda for Sunday afternoon, October 28th at the Skirvin Hotel. This is the day preceding the opening of the Oklahoma City Clinical Conference.

The topics will be varied and with the guests now committed you may be assured that the topics, as well as the entertainment, will be well worth your time.

I sincerely urge that you mark this date on your calendar, make definite plans to attend and arrive with lively plans to participate.

J. Hoyle Carlock, M.D.

OSMA JOURNAL/scientific

Tympanoplasty by Free Vein Graft

A Preliminary Report of Sixty Cases

ETHAN A. WALKER, JR., M.D., F.A.C.S.

A modern technique for the repair of defects of the tympanic membrane in certain cases of chronic middle ear disease.

DURING THE past decade, there has been continuing progress in surgical techniques for the repair of defects in the tympanic membrane, for the eradication of disease in the temporal bone and for the restoration of hearing. For many years the modified radical mastoidectomy was the only operation which encompassed these objectives in chronic disease of the middle ear. This was an excellent procedure with only two disadvantages. The first of these was the production of a large mastoid cavity which necessitated frequent cleaning and which became easily infected. Secondly, in some cases the absence of large portions of the tympanic membrane made it difficult to restore an adequate hearing level.

Of great promise was the recent development of the free skin graft technique. This held out hope for the restoration of serviceable hearing levels in many ears where it had not been previously possible. This also achieved the repair of simple perforations of the tympanic membrane without extensive operations or the production of a large, permanent cavity in the ear.

The free skin graft was found to have certain disadvantages. First, skin removed from other areas and introduced into the external auditory canal and over the tympanic membrane did not have the property of being able to cleanse itself especially when confined in a small cavity. This caused the accumulation of desquamated debris and resulted in recurrent infections. Second, the development of postoperative cholesteatoma became a serious problem. Not only did the work have to be undone but frequently there was further destruction to the ear.

In 1960, Shea[3] suggested the use of a vein graft for the closure of perforations of the tympanic membrane. This graft, unlike the skin graft, was to be applied on the inner surface of the perforation. It could be buried where epithelial tissue could not.

Tabb[5] in 1960 reported twenty cases of closure of tympanic membrane perforations by a vein graft with encouraging results.

Our first use of this technique was on a perforation which had followed a stapedectomy. This was a simple, uncomplicated, central perforation. There was prompt closure of the perforation and healing of the tympanic membrane. An excellent level of hearing was achieved. Following this, the procedure was used on several other small, uncomplicated central perforations with such

satisfactory results that it was decided to attempt its use on a series of unselected cases with all types of perforations of the tympanic membrane. The purpose of this paper is to describe this technique and report the results on a series of 60 cases wherein all types of perforations of the tympanic membrane were closed with the use of a free vein graft placed medial to the margins of the perforation.

TECHNIQUE OF OPERATION

In the majority of the patients operated on, local anesthesia was used. If there was to be extensive removal of bone, or if the patient was a child, a general anesthetic was used. The outer portion of the ear was prepared with Septisol® and the canal was prepared with aqueous Zephiran® solution 1:5000.

Where the perforation was small, central and recent, and there was no history of extensive infection, the procedure was performed without exploring the middle ear. However, where the perforation was marginal and there was a history of extensive infection, or where the perforation was large or had been present for some time, a tympanotomy incision was used and the middle ear explored.

Following preparation and adjustment of the operating microscope, the medial surfaces of the margins of the perforation were curetted to remove any infolding squamous epithelium and to prepare a raw surface for application of the graft. Where a tympanotomy was indicated, a routine posterior tympanotomy incision was made in the skin of the canal wall, the skin was elevated and the tympanic membrane folded forward. Overhanging bone was removed with a curet to permit good visualization of the ossicles.

Where a cholesteatoma was present, the six o'clock and 12 o'clock portions of the incision in the canal wall were extended outward and the 12 o'clock one was extended upward anterior to the pinna as in a routine endaural incision. As more and more bone was removed and the landmarks were well identified, a small diamond burr was used to remove bone until all of the diseased tissue was exposed and removed.

No attempt was made to remove all the mastoid cells if the tympanic membrane could be reseated and grafted in a way to preserve continuity between the tympanum proper and the mastoid cell complex, providing no evidence of infection remained.

A great deal of importance was attached to the presence of a perforation which bordered on any portion of the long process of the malleus. An incursion of squamous epithelium was frequently found in this circumstance and it is very important to remove all of this epithelium from the medial surface of the long process to prevent the subsequent formation of a cholesteatoma.

After all pathologic tissue has been removed, the tympanic membrane is repositioned and the middle ear filled with small pieces of Gelfoam® which have been soaked in Hydeltrasol® solution. This forms a firm bed for the placement of the free graft and also helps to establish blood supply. The Gelfoam liquefies a few weeks following the operation.

A piece of vein is removed from the dorsum of the hand, from the ankle or from the external jugular vein. It is trimmed of all fat and excess connective tissue and then is split lengthwise to form a rectangle which is then placed on the Gelfoam bed. The free edges are tucked beneath the margins of the perforation so that the adventitious surface of the vein lies adjacent to the denuded medial surface of the tympanic membrane. The intima of the vein graft faces the medial wall of the middle ear. A few small pieces of nylon cloth are soaked in Neocortef® ointment and tagged with black silk. These are placed in the external auditory meatus overlying the graft and the margins of the per-

---

Ethan A. Walker, Jr., M.D., graduated from the University of Oklahoma School of Medicine where he is now Assistant Professor of Otolaryngology and Chairman of the Department of Otolaryngology in addition to his private practice in Oklahoma City.

He is a member of the American Academy of Ophthalmology and Otolaryngology, the Oklahoma City Academy of Ophthalmology and Otolaryngology and the American College of Surgeons.

foration, and also over the incision in the external canal wall. These packs usually are removed on the fifth or sixth postoperative day.

DISCUSSION OF CASES

A total of sixty ears were operated on with this technique during a period of eighteen months. In the case of unsuccessful closure of some perforations, a second or even a third operation did satisfactorily close the tympanic membrane, but only the result of the initial operation is being reported on each of these ears.

During the period which encompassed this series a few ears were encountered which had cholesteatomas and associated chronic infection which could not be controlled prior to operation. In these ears free grafts were not used and they were not included in this series.

There was successful closure of the perforation in the tympanic membrane in 46 of the 60 cases (77 per cent). Temporary closures, which later developed small perforations which had to be reclosed, are not listed as successes.

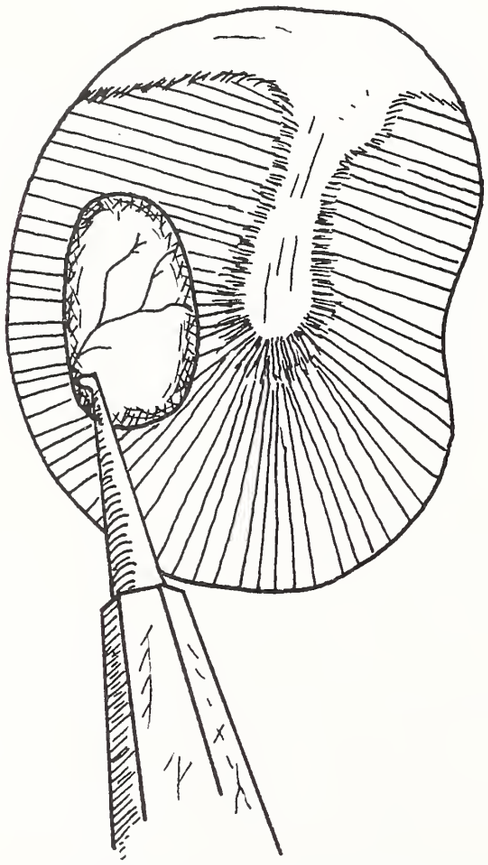


Figure 1. Medial surface of the margins of the perforation being curetted.

Eighty-five per cent of the patients operated had improved hearing with the first operation. These were divided as follows: 28 patients (47 per cent) had improvement of from one to 15 decibels inclusive; 23 (38 per cent) had improvement of 16 decibels or greater. The remaining 15 per cent either had no improvement or had diminished hearing. The percentage of cases in which hearing was improved is higher than those in which a successful closure was obtained, and this is due to partial closure in some ears with resultant improvement in hearing, even though a perforation still existed.

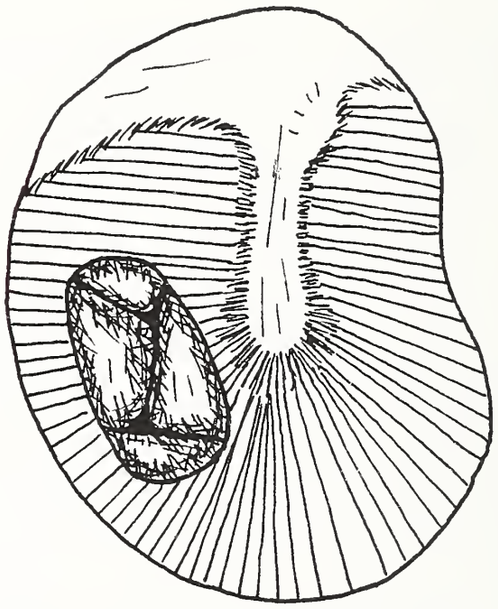


Figure 2. Pledgets of Gelfoam inserted into the middle ear.

Of the 60 ears, the perforations were central in 41 (68 per cent) and in 19 (32 per cent) were marginal.

Of the central perforations, 80 per cent (33 of 41) were closed with the first operation. Eighty-five per cent (35 of 41) of the ears with central perforations had improved hearing with the first operation. Some of the ears with perforations which closed did not get improvement in hearing, and in some of those in which the perforation did not close, but was made considerably smaller, there was improvement in hearing.

Eighty-four per cent of the marginal perforations had improved hearing with the first operation (16 of 19) and 68 per cent of the marginal perforations had closure of the perforation with the first operation (13 of 19).

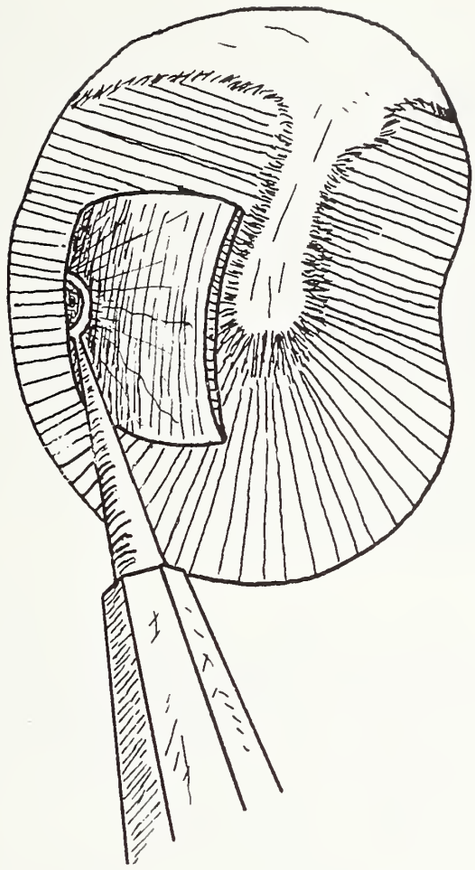


Figure 3. Edges of the vein graft being tucked beneath the margins of the perforation with a wire loop.

Twenty of the total of 60 ears operated had cholesteatoma, an incidence of 33 per cent. Eighty per cent (16 of 20) of the ears with cholesteotoma had closure of the perforation with the first operation, while 20 per cent (4 of 20) failed to close.

Of the sixty ears operated, 30 (50 per cent) now have serviceable hearing with a three frequency pure tone average air conduction loss of 15 decibels or less (the three frequencies used were 500, 1000 and 2000 c.p.s.). Of the remaining ears, 11 (18 per cent of the total) have serviceable hearing of 15 to 30 decibels in the three frequency average by pure tone and 18 (30 per cent) have hearing levels which are poorer than 30 decibels. One child was too young to be tested either before or after her operation.

Table 1. Central Perforations (41).

	Improved Hearing	Hearing Not Improved
Successful Closure	31 (75%)	2 (5%)
Perforation Not Closed	4 (10%)	4 (10%)

Table 2. Marginal Perforations (19).

	Improved Hearing	Hearing Not Improved
Successful Closure	13 (68%)	None
Perforation Not Closed	3 (16%)	3 (16%)

DISCUSSION

In each case, the procedure was not applied unless a clean, dry ear could be obtained by treatment and could be maintained in this state for six weeks prior to operation. It was thought not to be sound technique to apply a free tissue graft in an infected field.

A tympanotomy was performed on each case except where small, recent perforations existed. The majority of the perforations of the latter type occurred either from water skiing accidents or from a blow on the ear.

It seems important to stress again the situation where a central perforation borders the handle of the malleus. It is extremely important to explore the area of the long malleolar process to ascertain the presence of an early cholesteatoma. Cholesteatomas originate easily at this point, just as they do when the perforation borders the peripheral rim of the tympanic membrane and, in a number of these cases, squamous epithelium was found to have grown onto the medial surface of the malleolar process.

Early in the series where a piece of vein obtained was too small, an attempt was made to use two pieces of vein to close a perforation. This proved to be unsatisfactory and the results improved a great deal when the perforation was closed with a single

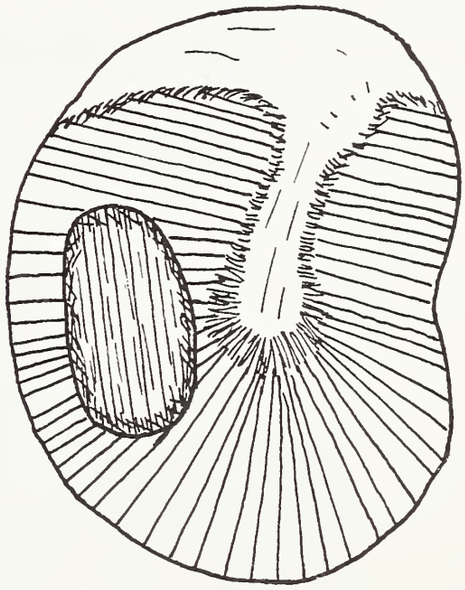


Figure 4. Free vein graft in place.

piece of vein. For this reason, most of the procedures employed a piece of the external jugular vein which ordinarily is large and is easily accessible through a small incision. Where the perforation was small and the veins in the dorsum of the hands were large, one of these veins was used. The vein was placed in the middle ear with the intima medially and the adventitia laterally and adjacent to the medial surface of the tympanic membrane.

Where considerable destruction had taken place and there was discontinunity of the ossicular chain, attempts were made to convert Type IV tympanoplasties to Type III with the use of a polyethylene columella or a piece of stainless steel wire extending from the foot-plate of the stapes to the undersurface of the graft.* These uniformly did poorly and in several cases a perforation developed in the center of the graft and the polyethylene tubing was extruded. It was used in a total of 11 cases, in six of which the perforations have remained, accounting for nearly half of the unsuccessful closures in this series. The prosthesis was spontaneously extruded from the ear in eight of these cases or had to be removed when it was clearly visible through the perforation it had helped to produce. In two of these the perforation later closed spontaneously. In three of the cases the prothesis has remained in the ear, but from the appearance of the tympanic membranes there is still suspicion they may yet erode through and be extruded or have to be removed. It is thought now that this type of procedure should be staged and that a good, intact, viable tympanic membrane should be obtained first and at a later date, possibly six months or one year, the graft can be elevated and connected to the footplate in some other manner.

Where veins of sufficient size were not available, fascia grafts, usually taken from the fascial sheath of the sternomastoid muscle, were used. These were not as good as vein grafts and did not remain viable in as large a percentage of cases. These cases have not been included in this series.

*In Type III the tympanic membrane or graft is applied directly to the stapes, while in Type IV the stapes is missing and the tympanic membrane or graft is applied to the footplate or open oval window.

SUMMARY

Tympanoplasties using free vein grafts were employed in a series of 60 unselected ears with perforation of the tympanic membrane. The results of this series are extremely encouraging to the author.

The technical procedures involved are discussed along with certain disadvantages encountered and refinements developed.

It is a privilege to express my indebtedness to Kenneth Rogers, M.D., for the excellent medical illustrations in this paper. □

REFERENCES

1. House, W. F. and Sheehy, J. L.: Myringoplasty. Arch. Otolaryng. 73: 407-415, Apr. 1961.
2. Schlosser, W. D. and Pratt, Lindsay L.: An Evaluation of Various Tympanoplasty Techniques. Arch. Otolaryng. 74: 429-434, Oct. 1961.
3. Shea, J. J., Jr.: Vein Graft Closure of Eardrum Perforations. J. of Laryn. and Otol. 74: 358-362, June 1960.
4. Shea, J. J., Jr.: Vein Graft Closure of Eardrum Perforations. Arch. Otolaryng. 72: 445-447, Oct. 1960.
5. Tabb, H. G.: Closure of Perforations of the Tympanic Membrane by Vein Graft: A Preliminary Report of 20 Cases. Laryngoscope 70: 271-286, Mar. 1960.

301 N.W. 12th Street, Oklahoma City, Oklahoma

AMA DUES INCREASE

The Americen Medical Association will increase its dues by $10 annually on January 1, 1963, bringing the total yearly amount to $45. A $20 increase was approved by the House of Delegates in 1961, to be realized in $10 increments effective in 1962 and 1963. Primary purpose of the higher dues is to improve public relations activities. □

Severe Drug Reaction With Bone Marrow Depression Due to Mesantoin

JOHN A. LUPAS, M.D.

This article illustrates the severe side effects which may occur with this drug and its relatives and stresses the need for close follow up of patients taking these drugs.

THE HYDANTOINS have long been known to cause bone marrow depression as a severe reaction and lymphadenopathy has also been noted to occur not infrequently when using these agents. As this class of drugs in general and mesantoin in particular have become more widely used, many cases of bone marrow depression with a high percentage of fatalities have been reported.[3, 5, 6, 7, 8, 11, 15, 18, 19]

The following case report is an example of a severe acute reaction to mesantoin and serves to illustrate the potential dangers of this class of drugs and the need for close observation of patients taking them.

CASE REPORT

The patient is a full blood Apache Indian, 26 years of age, who has been suffering from grand mal seizures since childhood and has been on anti-convulsant medications for many years. For the past five years he has been well controlled on 200 mg. of diphenylhydantoin and 120 mg. of phenobarbital daily in divided doses. On 5-23-61, because of gingival hypertrophy, diphenylhydantoin was discontinued and mesantoin (3-methyl-5,5-phenylethyl hydantoin) was begun in a dosage of 100 mg. four times daily. The patient did fairly well on the new medication, having only an occasional grand mal seizure. He had no hematologic or other follow-up studies after being placed on mesantoin.

He was admitted to the hospital on 7-18-61 for an illness beginning two weeks prior to admission or five weeks after starting mesantoin when he noted the onset of mild diarrhea and occasional vomiting which lasted about one week and which was treated as gastroenteritis. No blood studies were done at this time. Five days before hospitalization he had a sore throat which was still present on admission and at the same time noted an erythematous, macular skin rash which was pruritic and was getting progressively worse. He also complained of fever, pain in the posterior neck and generalized myalgia.

Physical Exam: He was quite toxic on admission with a temperature of 104 F., pulse 120/min., and blood pressure 128/80. The pharynx was markedly injected with no exudate. There were bilateral, tender, large, well circumscribed, cervical, axillary and inguinal nodes, the largest of which was 8 x 3 cm. The heart and lungs were normal except for a tachycardia. There was generalized superficial abdominal tenderness but no masses and no signs of peritoneal irritation. There was no edema and no evidence of arthritis. Muscles of the extremeties and back were tender to palpation. There was an irregular erythematous, macular rash occurring in large patches and most marked on the trunk.

Laboratory: Table 1 shows the variation in the hemogram during hospitalization. Steroids were begun on 7-21-61. X-rays were normal throughout with no evidence of mediastinal node involvement. Urinalyses showed one plus albumin on several occas-

ions but no abnormal cellular elements were present. Sedimentation rate was 31 mm./hr. Bleeding and coagulation times were normal. Blood urea nitrogen was 9.5 mg. per cent on admission and was never elevated. Prothrombin time, serum transaminase, liver function tests, electrolytes, and Coombs test were all normal. Numerous blood cultures were sterile. Serum electrophoresis showed total protein to be 7.8 gm. per cent with 2.5 gm. albumin, 5.2 gm. globulin, with 32.1 per cent albumin, 4.2 per cent alpha globulin, (1) 6.2 per cent alpha 2 globulin, 10.0 per cent beta globulin and 47.5 per cent gamma globulin. The high gamma globulin level was thought to be consistent with severe toxic reaction and possibly to toxic hepatitis.

Hospital Course: He remained febrile with temperature spikes to 104 F. daily until 7-31-61 (14th hospital day) when he became afebrile and remained so until discharge. He was quite toxic during the first few hospital days and it was thought that his illness was probably on the basis of drug allergy although acute lymphoma could not be ruled out. On the third hospital day bone marrow aspiration was done and on the fourth day biopsy of an enlarged inguinal lymph node was performed. Also on the fourth day a decrease in the white blood count was first noted and at this time steroid therapy was begun, prednisone being used in a dosage of 60 mg. per day. On the fifth day pathology report was obtained and the diagnosis of drug reaction due to mesantoin was confirmed although the microscopic picture resembled acute lymphoma. (See discussion.) The patient was kept on steroids and given several blood transfusions. His white blood count was as low as 1100/cmm. and he had a marked eosinophilia prior to beginning steroids. His course was one of gradual improvement with decrease in size of the lymph nodes, disappearance of the rash and general feeling of well being and then the return of marrow function. Repeat bone marrow aspiration prior to discharge showed an essentially normal marrow. Prednisone was continued for two weeks at 60 mg./day and then tapered over a two week period with no difficulty. His spleen was never palpable but for several days in the early part of his illness his liver was palpable two cm. below the right costal margin and was tender. No biopsy was done.

After one month in the hospital the patient was discharged on phenobarbital alone but rather frequent grand mal seizures have again occurred and he has been restarted on diphenylhydantoin which has caused no trouble and which is now controlling his seizures with no toxic effects.

DISCUSSION

Mesantoin was first noted to cause decreased bone marrow function when used alone in 1948 by Frank and Holland.[7] Hydantoins in general have been known to cause aplastic anemia almost since initial usage of diphenylhydantoin in 1938. It has been recommended that frequent blood studies be done in these patients in order to detect early changes. Mesantoin is a more frequent offender in this respect and should probably not be used if a less toxic drug can control the seizures.

The lymph node reaction to hydantoins was well documented in the 1920's when the drug Nirvinal, which is related to mesantoin was used in the treatment of Syndenham's chorea. Lymphadenopathy was regularly expected when using this drug. In both man and dogs mesantoin has been shown to be

Table 1

PERIPHERAL BLOOD VALUES DURING ILLNESS

	7-18	7-21	7-23	7-26	7-28	7-30	8-2	8-16
White Blood Count/cmm.	6850	3850	2500	1800	1150	2050	4150	12800
Neutrophiles %	66	36	4	5	6	31	40	73
Lymphocytes %	12	14	21	81	83	64	50	26
Eosinophiles %	21	50	73	9	4	2	0	0
Platelets/cmm. (X 1000)	124	82	82	86	72			108
Reticulocytes %				0.1			1.8	2.0
Hematocrit %	38		36	32	30	38	40	42

Prednisone, 60 mg. daily was begun on 7-21. 1000 cc. of whole blood was given on 7-25, 500 cc. whole blood given on 7-27, and 500 cc. whole blood given on 7-28.

converted to nirvinal metabolically by demethylation.[4, 16] Salystin and Ackerman,[14] in 1959, revewed the world literature concerning lymphadenopathy caused by anti-convulsant drugs. Eighty-two cases were reported and 63 of these had been treated with mesantoin. The pathology of these nodes showed hyperplasia of the reticulum cells and infiltration with eosinophiles, neutrophiles, plasma cells and young lymphocytes. Mitotic figures and abnormal reticulum cells may also be quite prominent as may patches of necrosis and nuclear debris. These authors differentiate these cases from lymphoma because in drug reaction there is not the uniform picture of mature lymphocytes as seen in leukemia and lymphosarcoma. Reed-Sternberg cells are never seen and the nodes are discrete with less fibrosis in the drug reaction cases. They do note that adenopathy produced by anti-convulsant therapy and that in acute leukemia may be more difficult to differentiate. The reaction is considered to be an allergic manifestation to the drug in question.

Jonsson[10] reported two cases in 1961 who had been on mesantoin with reaction simulating infection and consisting of adenopathy pharyngitis and bone marrow depression. Splenomegaly and eosinophilia occurred in one and granulocytopenia and thrombocytopenia in the other.

Rosenfeld et al.[13] reported a case in 1961 in which a patient on Dilantin developed adenopathy and acute toxicity where biopsy of a lymph node was interpreted as lymphoblastic lymphosarcoma. Eosinophilia occurred as well as skin eruption, joint involvement and hepato-splenomegaly but there was no bone marrow depression.

The presently reported case manifested a number of the severe reactions to mesantoin, i.e., generalized toxicity, fever, skin rash, aplastic anemia and adenopathy. Some of the other reactions which are not uncommon with this drug and which have been enumerated by Witkind and Ward[19] are, drowsiness, nausea, emesis, nystagmus, ataxia, gingival hypertrophy (not nearly as common as with Dilantin), and toxic psychosis. Many of the more severe reactions this patient experienced could probably have been prevented had he been followed with periodic hemograms and had the drug been stopped when he first became symptomatic with his gastrointestinal symptoms.

A 1959 graduate of Hahnemann Medical College, John Albert Lupas, M.D., is now taking a residency in pediatrics at the Public Health Service Indian Hospital in Lawton, Oklahoma.

SUMMARY

A case of drug reaction to 3-methyl-5,5-phenylethyl hydantoin (mesantoin) is reported in which occurred bone marrow depression, generalized adenopathy, marked eosinophilia, generalized toxicity, and skin rash. Successful treatment consisted of cessation of the drug, steroids and general supportive care. The importance of following patients on hydantoins in general and mesantoin in particular with frequent visits and hemograms is stressed. □

BIBLIOGRAPHY

1. Beisel, N. A., Finesilver, B., Solomon, P., Somerfeld-Ziskind, E., and Ziskind, E.: Mesantoin in Epilepsy: Report of 80 Cases. J.A.M.A. 143: 1460, Aug., 1950.
2. Bjornstad, R.: Leukopenia and Scarlatiniform Exanthem Resulting from Medication with Mesantoin. Acta. Derm. Vener. 33: 425, 1953.
3. Burrell, Z. L.: Fatal Pancytopenia as a Result of Improperly Supervised Mesantoin Therapy. Am. Pract. and Digest of Treat. 6: 927, 1953.
4. Butler, T. C.: Quantitative Studies of the Physiological Disposition of 3-methyl-5-phenyl hydantoin (mesantoin) and 5-ethyl-5-phenyl hydantoin (nirvenil). J. Pharmacol. and Exp. Therap. 109: 340, 1953.
5. Davies, R. R., Fisch, C., and Tischer, E. P.: Pancytopenia due to Mesantoin. N. Eng. J. Med. 242: 863, Jan., 1950.
6. England, N. J., and McEachern, D.: Acute Aplastic Anemia During Mesantoin Therapy. Canad. M.A.J. 60: 173, Feb., 1949.
7. Frank, C. W., Holland, J. F.: Pancytopenia from Mesantoin. J.A.M.A. 138: 1148, Dec., 1948.
8. Harrison, F. F., Johnson, R. D., and Ayer, D.: Fatal Aplastic Anemia Following Use of Tridione and a Hydantoin. J.A.M.A. 132: 11, Sept., 1946.
9. Jones, D. P.: Methoin in the Treatment of Epilepsy. British Med. J. 13: 64, Jan., 1951.
10. Jonsson, M.: Mesantoin Reaction Simulating Infection. Nord. Med. 65: 408, March, 1961.
11. MacArthur, P.: Serious Idiosyncrasy to Methoin. Lancet. 1: 592, March, 1952.
12. Mallin, A. W. and Gammon, G. D.: A Clinical Evaluation of Mesantoin in Epilepsy. J. Nerv. and Ment. Dis. 118: Sept., 1953.
13. Rosenfeld, S. D., Swiller, A. I., Shenoy, M. V., and Morrison, A.: Syndrome Simulating Lymphosarcoma Induced by Diphenylhydantoin Sodium. J.A.M.A. 176: 491, May, 1961.
14. Salystein, S. L., and Ackerman, L. V.: Lymphadenopathy Induced by Anticonvulsant Drugs and Mimicking Clinically and Pathologically Malignant Lymphomas. Cancer, 12: 164, Jan.-Feb., 1959.
15. Stillman, S., Bedell, S. G., and Leavitt, D.: Fatal Aplastic Anemia Associated with Mesantoin: Report of a Case with Autopsy. J. Florida M. A. 37: Feb., 1951.
16. Swinyard, E. A., Brown, W. C., and Goodman, L. S.: Comparative Assays of Anti-Epileptic Drugs in Mice and Rats. J. Pharmacol. and Exper. Therap. 106: 319, 1952.
17. Weiss, H. A. and Haniley, W. D.: Pancytopenia Following the Use of Mesantoin and Thiantoin. U.S. Armed Forces M. J. 2: 83, Jan., 1951.
18. Weller, R. W. and Metcalfe, J.: Fatal Pancytopenia Following the Use of Mesantoin. N. Eng. J. Med. 241: 17, July, 1949.
19. Witkind, E., and Ward, M. E.: Aplasia of the Bone Marrow During Mesantoin Therapy. J.A.M.A. 147: 757, Oct., 1951.

Public Health Service Indian Hospital,
Lawton, Oklahoma

Report on a Case of

Macroglobulinemia and Cryoglobulinemia

CHARLES E. COOK, Jr., M.D.

An unusual medical case in which both macroglobulinemia and cryoglobulinemia were diagnosed and verified in the same patient.

THIS PATIENT was a 63-year-old white male who entered the hospital on April 28, 1960. His chief complaints were weakness, shortness of breath, loss of weight, loss of appetite, generalized aching and soreness of his flesh. He dated the present illness to November, 1958, when he developed a strangulated hernia that required emergency surgery. He recovered and went back to his grocery store business, but never did regain the state of good health he enjoyed prior to surgery. Two months before admission he began to develop his admission symptoms. He noticed progressive weakness, loss of appetite with a rapid loss of weight totaling 40 pounds in 60 days, shortness of breath on exertion only, generalized aching in muscles and joints with a soreness of his flesh to touch. He stated that his eyesight had failed considerably during the 60 days prior to admission and he had developed a moderate swelling of his lower legs for which his private physician had treated him. There was no history of polydipsia, polyphagia nor polyuria. The patient had a tendency to minimize all of his symptoms and he omitted a few pertinent facts which were supplied in an interview with his wife. Their older son had died in 1938 from disseminated lupus erythematosus. She also stated that her husband had suffered with the herina for six years prior to surgery and had a hard time during the operation. Following surgery he developed a pulmonary embolus from which he recovered during a three week period of hospitalization. While in the hospital, he developed severe itching which was controlled by the time he was discharged. He apparently had repeated attacks of urticaria, varying in body location, the last attack occurring two weeks prior to the present hospital admission. He gradually developed discoloration of the lower arms and back and lower legs and feet over the past several years. The wife stated that he slept part of each day but would work in the grocery store until 10 or 11 o'clock each night and that he had never eaten a balanced ration since they had been married. He apparently had bizarre eating habits, one day eating macaroni and cheese for all three meals and nothing else, at other times nothing but eggs, or toast and jelly, or hot chocolate. She stated that he had always had an irritable personality which led to occasional marital conflicts. Two months prior to admission he had been treated by his private physician with digitalis and a diuretic for an ailing heart. She also stated that there were times during this

60 day period when he complained of a sensation of water jostling in his ears and he would shake his head to see if she could hear it. Also at times after sitting up from a prone position, she said water would run out of his nose and eyes.

The past history, otherwise, was rather insignificant. He was a World War I veteran, had smoked a pipe for 45 years but quit in 1958 after the hernia operation. He admitted to drinking an occasional beer but denied the use of habit forming drugs. His father died at age 87 from old age, but his mother was living and in fair health for her 93 years. He had two brothers in good health, ages 68 and 60. The wife was 60 years of age and the living son was 35 years of age, both in good health. There was no history of diabetes or tuberculosis in his family. The patient was apparently allergic to penicillin but to no other food or drug that he knew of.

The physical examination on April 28, 1960 revealed a well developed, but markedly emaciated and dehydrated white male, 63 years of age, who was in no apparent acute distress. He was 67 inches in height; he weighed 100 pounds with 150 pounds for an average and 164 pounds for a maximum weight being recorded. His temperature was 97.8° orally, pulse 76 regular and equal to the heart rate, blood pressure 120/70. The head and neck were unremarkable and the thyroid gland was not palpable. The pupils were round and equal but reacted sluggishly to light and accommodation. There was an area of retinal atrophy one-third the size of the nerve head located between it and the macula in the left eye. There were no other areas of retinal atrophy in the left eye and none in the right eye. The nose appeared normal with adequate ventilation but both tympanic membranes were moderately sclerosed and retracted with slight deafness bilaterally. He was edentulous with adequate upper and lower dental prostheses. The chest was barrel shaped with an increase in the AP diameter, however, it was symmetrical. There was some limitation of excursion on respiration with slightly diminished breath sounds. The lungs were clear to auscultation and hyperresonant to percussion. The heart sounds were muffled and were best heard in the upper extreme left part of the epigastrium. There were no murmurs, the rate was regular and the heart was not clinically enlarged. The abdomen was soft, no masses were felt and the spleen was not palpable. The liver was easily palpated through the very thin abdominal wall and it came down about three inches on deep inspiration. There was a well healed right herniorrhaphy scar with an unexplained bulge just below the center of the scar 4 x 2 cm. (which he stated had been there since surgery). The genitalia showed an absence of the right testicle which the patient said had never been present, otherwise normal male. There were no hemorrhoids seen or felt on rectal examinaton, but the prostate was one time enlarged, soft, symmetrical, smooth and non-tender. Several small lymph nodes were palpable in each groin but none elsewhere. All of the reflexes were normal. The skin generally was dry and scaly with a dehydrated appearance. There was hyper-pigmentation of the lower arms and hands and of the lower legs and feet. There was mild pitting edema above each ankle bilaterally. Pulsations of the dorsal pedis arteries were palpable bilaterally. There was some stiffness and pain on movement of the right shoulder, otherwise the extremities were unremarkable.

The clinical impressions of this case at that time were:

1. Pulmonary emphysema, moderate
2. Bursitis, right shoulder
3. Deafness, bilateral
4. Pellagra
5. Addison's disease, and/or a blood dyscrasia must be ruled out.

The admission hemogram showed a hypochromic anemia. RBC 3,450,000; hematocrit 34; hemoglobin 10 grams; sedimentation

---

Since graduating from the University of Oklahoma School of Medicine in 1942, Charles E. Cook, Jr., M.D., has been certified by the American Board of Preventive Medicine in Aviation Medicine. He is now with the Veterans Administration Hospital in Muskogee, Oklahoma.

Doctor Cook is a Fellow of the American College of Preventive Medicine, a member of the American College of Physicians, the Aerospace Medical Association, the American Public Health Association and the Civil Aviation Medical Association.

rate 28; WBC 6,900, neutrophiles 84, lymphocytes 13, monocytes two, and eosinophiles one. The initial urinalysis was amber and cloudy, specific gravity 1.016, albumin 2+, sugar negative; the microscopic showed a few white blood cells, a few red blood cells and occasional granular casts. The serology, microflocculation was nonreactive. The chest x-ray was reported as: Moderate pulmonary emphysema; there is a calcific plaque in the aortic knob; heart not grossly enlarged.

Further x-ray studies were done soon after admission. On 5/2/60 Abdomen: No visible calficification in the region of the suprarenal glands. On 5/5/60 G-I Series: Normal. On 5/9/60 Barium Enema: Normal except an incomplete rotation of the cecum and transverse colon was noted. On 5/19/60 a flat bone series was reported as showing no radiographic evidence of multiple myeloma.

Laboratory tests which were reported as normal during the hospital period were: NPN 5/3/60 34 mg. per cent and 6/2/60 27 mg. per cent; BUN 5/3/60 18 mg. per cent; serum bilirubin 5/16/60 0.3 mg. per cent; serum sodium 5/2/60 139.5 meq/1; serum potassium 5/2/60 5.0 meq/1; serum cholesterol 5/9/60 100 mg. per cent; serum calcium 5/11/60 9.5 mg. per cent; bromsulfalein 5/4/60 5 per cent; P.B.I. 5/13/60 3.6 mcgm. per cent; fasting blood sugar 5/3/60 73 mg. per cent and 5/6/60 73 mg. per cent; glucose tolerance test 5/11/60 normal curve; Bence Jones protein in urine 5/17/60, 5/23/60, 5/24/60 and 5/25/60 all reported as negative; L.E. Prep. 5/23/60 negative; EKG 5/9/60 was normal. The prothrombin time was 100 per cent on 5/11/60 and 75 per cent 5/13/60. A repeat urinalysis on 5/11/60 was yellow, hazy, acid, specific gravity 1.022, sugar negative, albumin 2+; the microscopic showed some white blood cells, many fine granular hyaline casts and coarse granular casts. A BMR on 5/4/60 was +45 per cent but was considered unreliable when the P.B.I. was found to be within normal limits.

Laboratory tests that were significant were the coagulation time (Lee-White) 5/10/60 one hour and seven minutes; A/G ratio 5/17/60, albumin 2.4, globulin 4.2 and total protein 6.6 per cent; and electrophoresis on 5/18/60, total protein 8.0 gamma per cent, albumin 1.6 g per cent, A_1 0.5 g per cent, A_2 0.6 g per cent, B 0.6 g per cent, gamma and slow gamma globulin 4.8 g per cent. The Sia test was not available in our laboratory but apparently it is not considered to be very reliable.[1, 3]

Other abnormal laboratory data included: Cephalin flocculation 5/9/60 4+; thymol turbidity 5/9/60 17 units; and a gastric analysis 5/17/60 which reported total acidity 28 and free HCL 0.

Soon after admission it was noted that simple venipuncture caused considerable extravasation of blood subcutaneously. This bleeding tendency progressively worsened and a total of ten pints of a hard to get, rare type blood (Type AB Rh negative) were given, mostly by venous cut-downs. Two bone marrow studies were made 5/23/60 and 5/27/60 but were unsatisfactory due to considerable admixture of peripheral blood.

A blood count 5/10/60 showed 2,550,000 RBC; hematocrit 25, with 204,000 blood platelets, and again 5/13/60 1,950,000 RBC; hematocrit 20; hemoglobin 6.0 grams; sedimentation rate 10; WBC 5,800, neutrophiles 85, lymphocytes 15, and 156,000 blood platelets. On 5/14/60 three 500 cc. units of blood were given. The hemogram 5/17/60 was 2,920,000 RBC; hematocrit 28; hemoglobin 8.6 grams; sedimentation rate 10; WBC 5,100, neutrophiles 85, lymphocytes 13, monocytes two; blood platelets 342,560. Four more 500 cc. units of blood were given, two 5/18/60, one 6/2/60 and one 6/6/60.

The patient was given extensive supportive therapy including 5,000 cc. of whole blood by transfusion, but he rapidly and progressively deteriorated. Several days prior to death, he developed large ecchymoses in the right flank which became massive at the time of death. Multiple areas of purpura on the extremities were noted. He developed a large ileus, which would not decompress, along with edema and extensive ecchymoses in the scrotum. It was the consensus that massive retroperitoneal bleeding was in progress, apparently due to a marked defect in his clotting mechanism. This defect was thought to be a lack of the thromboplastin forming capability of his blood because a test tube of blood coagulated and clotted normally when

a small amount of thromboplastin was added to it.

After a reversal of the albumin-globulin ratio was found, an electrophoretic pattern identified the excessive globulin factors to be within the cryoglobulin and macroglobulin range. Rouleaux formation was observed to be marked and very rapid. Two tubes of blood were then drawn. One was placed in the refrigerator and the other in the 37 degree water bath. At one hour and ten minutes the bath sample seemed to be clotted but the blood from the cells of the refrigerated sample had settled out but were not completely clotted, even though the serum did appear to be clotted. Both samples were rimmed and centrifuged for five minutes at 1950 rpm's. After centrifuging, the coagulum in the refrigerated specimen had practically disappeared. The liquid portion of the serum was poured into another test tube with ease. The serum in the water-bath specimen was practically solid and only a little part of liquid could be poured off with difficulty. Each serum was placed over night at original temperature. The following morning the serum from the refrigerated specimen was solid again and the water-bath specimen was partially solid but had considerable serum. Both serums were rimmed and centrifuged. There was a large solid residue in the refrigerated serum and only a small one in the water-bath serum. The serums were replaced and read two days later. At that time the serum that was now left in the water-bath specimen was almost entirely liquid, while the serum from the refrigerated specimen was solid again.

There was no evidence of multiple myeloma by x-ray of the flat bones of his body, the lupus erythematosus preparations were negative and Bence Jones protein determinations were negative. However, because the bone marrow preparations were unsatisfactory due to excessive admixture of peripheral blood and with ultracentrifugal analysis being unavailable, a diagnosis of macroglobulinemia of Waldenstrom could only be suspected.

The patient continued to hemorrhage into body tissues, developed what appeared to be a bronchopneumonia, and expired on June 9, 1960.

The clinical diagnoses made were:

1. Hemorrhage into body tissues due to defective clotting mechanisms, cause unknown.
2. Cryoglobulinemia, cause unknown.
3. Macroglobulinemia, cause unknown.
4. Anemia, severe, secondary to diagnosis #2.
5. Pulmonary emphysema, cause unknown.
6. Bursitis, right shoulder.
7. Deafness, moderate, bilateral.

At autopsy, hemorrhage into the tissues of several organs was found along with massive extensive retroperitoneal hemorrhage on the left side into the psoas muscle and extensive retroperitoneal hemorrhage was found in the pelvis which had seeped into the urinary bladder. Bronchopneumonia, pulmonary emphysema and bronchiectasis were found in each lung by gross examination. Microscopically nothing attributable to the underlying disease was found until the bone marrow was examined. Cells were found which resembled mixtures between lymphocytes and plasma cells consistent with the type cells which have been described in Waldenstrom's macroglobulinema. There was no evidence of plasma cell myeloma or other disease such as malaria, Kala-azar, nephrosis or cirrhosis which are capable of producing a macroglobulinemia.

The pathological diagnoses were:

1. Macroglobulinemia of Waldenstrom.
2. Acute bronchopneumonia.
3. Hemorrhage, retroperitoneal, retropleural and subcutaneous, marked.
4. Ulceration of distal esophagus.
5. Pulmonary emphysema.
6. Atherosclerosis, generalized, moderate.
7. Fibrous pericarditis, focal.
8. Passive congestion of liver and spleen.
9. Chronic pyelonephritis, inactive.
10. Nodular hyperplasia of prostate.
11. Hyalinization of basement membranes of seminiferous tubules.

DISCUSSION

Mackay[1] defines macroglobulins as giant protein molecules whose molecular weight is over one million and cryoglobulin as a protein which precipitates on cooling but redissolves on warming to body temperatures.

Clinical signs and symptoms observed in this case that have been described elsewhere[1, 2, 3] in relation to cryoglobulinemia were urticaria, purpura, retinal atrophy and hemorrhage. Hematological findings in the laboratory that were consistent with other reports on cryoglobulinemia[1, 2, 3] were marked rouleaux formation, increased viscosity of the serum and an abnormal increase of the original erythrocyte sedimentation rate.

Nonspecific clinical signs that were present which have been observed by others in macroglobulinemia,[1, 2, 3, 4, 5] were hemorrhagic diathesis, edema, lassitude, fever, hepatomegaly, painless lymph node enlargement, elevated sedimentation rate, weight loss, and anemia. In this case electrophoretic pattern revealed a hypo-albuminemia and a hyperglobulinemia consistent with both cryoglobulin and macroglobulin fractions. The abnormal plasma proteins were thus only grossly determined to be cryo and macroglobulin since an ultra centrifuge was not available for a more specific identification procedure.

Along with other findings, Sirridge[2] reported generalized osteoporosis in a case of cryoglobulinemia and macroglobulinemia, but none was found in this case. □

REFERENCES

1. Mackay, I. R., Eriksen, N., Motulsky, A. G., and Volwiler, W.: Cryo- and macroglobulinemia; electrophoretic, ultracentrifugal and clinical studies. Am. J. Med. 20: 564, 1956.
2. Sirridge, M. S.: Waldenstrom's macroglobulinemia with cryoglobulinemia, Ann. Int. Med. 53: 380, 1960.
3. Harrison, T. R., et al.: Principles of Internal Medicine, Chap. 222, 3rd Edition, 1958.
4. Jim, R. T. S., and Steinkamp, R. C.: Macroglobulinemia and its relationship to other paraproteins; with a case report. J. Lab. and Clin. Med. 47: 540, 1956.
5. Voight, A. E., and Frick, P. G.: Macroglobulinemia of Waldenstrom: a review of the literature and presentation of a a case. Ann. Int. Med. 44: 419, 1956.

Veterans Administration Hospital, Muskogee, Oklahoma

HEALTH AND WELFARE ASSOCIATION PLANS CONFERENCE

Current trends and developments affecting human needs will be brought into focus during the 20th Annual Conference of the Oklahoma Health and Welfare Association November 26-28 at the Sheraton-Oklahoma Hotel in Oklahoma City.

Centered on the theme "Pathways to Progress," the general sessions, associate group meetings and 14 special interest institutes will cover a range of subject matter of concern to professional and lay workers from many fields.

Among speakers already engaged for the general sessions are Mrs. Muriel S. Webb, associate director, National Council Protestant Episcopal Church, Department of Christian Social Relations, New York City; William C. Fitch, executive director, American Association of Retired Persons, Washington, D.C;

Eugene Pumpian-Mindlin, M.D., associate professor of psychiatry, University of California Los Angeles School of Medicine; and Rev. Sheldon Rahn, executive director, Department of Social Welfare, National Council of Churches, New York City. Other speakers will be announced later.

Institutes are scheduled the first two days of the conference. Each will have two sessions.

Institute topics Monday, November 26, include: Group Work in Child Care; Mental Health—Back to the Community; Who are the Handicapped; Progress in Maternal and Infant Child Health Services; Aging—Isolation or Integration; Retraining and Education for Productive Living; and Community Cooperation—Fact or Fancy.

Tuesday (November 27) institutes will deal with: Supervision—Give and Take; What Families Are Like Today; Emergency Welfare Services and Emotional First Aid in Times of Stress; Services to Agricultural Migrant Workers and Non-Resident Families; Prevention and Treatment of Juvenile Delinquency; Working Together in Urban Renewal and Area Redevelopment; and Community Role in Retardation. □

Test Your Knowledge of Physical Diagnosis

LOYAL L. CONRAD, M.D.*

Match the following. There is only one correct answer for each part. Answers at bottom.

1. Pulmonary hypertension	____	a. Accentuated fourth heart sound
2. Accentuated first heart sound	____	b. Dilated pulmonary artery or aorta
3. Mitral or tricuspid regurgitation	____	c. Extracardiac sound
4. Left ventricular hypertrophy	____	d. Pansystolic murmur
5. Pliable mitral valve	____	e. Cardiac enlargement
6. Atrial gallop	____	f. Left Parasternal lift
7. Systolic ejection sound	____	g. Accentuated pulmonary component of second sound
8. Right ventricular hypertrophy	____	h. Aortic valve closure preceding pulmonic
9. Ventricular gallop	____	i. Apical thrust
10. Aortic or pulmonic stenosis	____	j. Aortic stenosis
11. Paradoxical splitting of second sound	____	k. Mitral stenosis
12. Aortic or pulmonic regurgitation	____	l. Accentuated third heart sound
13. Normally split second sound	____	m. Delayed closure of mitral valve
14. Irrefutable evidence of heart disease	____	n. Diastolic regurgitant murmur
15. Systolic gallop	____	o. Mitral opening snap
16. Fou-ta-ta-rou	____	p. Systolic ejection murmur
17. Postgraduate course, Physiologic Principles of Cardiac Physical Diagnosis	____	q. November 14, 1962

ANSWERS

1. g	7. b	13. h
2. m	8. f	14. e
3. d	9. l	15. c
4. i	10. p	16. k
5. o	11. j	17. q
6. a	12. n	

Editor's Note: There will be a postgraduate course at the Medical School "The Physiologic Principles of Cardiac Physical Diagnosis" sponsored by the Oklahoma State Heart Association. The speakers will be E. E. Eddleman Jr., M.D., Associate Professor of Medicine at the Medical College of Alabama, and Bernard L. Segal, M.D., from the Cardiovascular Section, Department of Medicine, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania.

*Chief, Cardiovascular Disease Section, Veterans Administration Hospital, Oklahoma City, Oklahoma. Associate Professor of Medicine, University of Oklahoma Medical Center.

Dean's Message

A national publication recently devoted considerable space to a description of the success of a program of "Internships in Government," created for young college students in an effort to stimulate their interest in careers in government service. A somewhat similar experiment has been developed and expanded in the Medical Center over the past several years, aimed primarily at offering a behind-the-scenes view of medical research. Some 30 high school students have been employed in suitable capacities in the various research laboratories throughout the center during the summer months. These students participate actively in research and in science seminars in various departments.

Most of the sponsors are individual faculty members of the medical school and also there are Fleming Scholars whose summer activities are made possible by the Oklahoma Medical Research Foundation. Fleming Scholars are selected after a highly competitive and rigorous process of examination and determination of scientific potential. Approximately 120 applications are submitted each year from students who have completed their junior year of high school. This program has been in effect since 1956, since which time a total of 34 students have received the awards. Its success can be measured in some degree by the fact that eight of the former scholars are now in premedical studies and another ten are in some field of scientific endeavor.

Less well known but nonetheless an important new influence is the Advanced Science Seminar in which many faculty members participate to help talented Oklahoma City high school science students pursue and broaden their interests. Many of the youth taking summer jobs at the center are from this group.

At a time when there is nation-wide concern over the problem of a proportion between medical manpower resources and the rapidly expanding population, it is encouraging to observe these interested and attractive youngsters being given the opportunity to take an active part in and make a contribution to various phases of medicine and medical research. Undoubtedly, the early stimulation and experience in the lives of many of these young people will provide the sound and sincere motivation so important in considering a career of service in medicine.

Similar programs designed to attract and encourage qualified students might not only be feasible but highly desirable in many community hospitals and clinics. It may be that communities could assist in fulfilling their future requirements for doctors, nurses and technologists by instituting organized summer programs which stimulate an early interest in medical and paramedical careers among students of high school age. □

Mark R Everett

The Management of Traumatic Amputations

DON H. O'DONOGHUE, M.D.
G. RAINEY WILLIAMS, M.D.
GAEL R. FRANK, M.D.
DAVID D. SNYDER, M.D.

SURGICAL REPLANTATION of amputated extremities has recently received widespread newspaper publicity. For years such attempts have occasionally been successful, however with the development of improved surgical technique and care, replantation operations are of considerable practical as well as scientific interest and can be applied to patients with major traumatic amputations.

The purpose of this communication is to call attention to the small but important group of patients with traumatic amputation of an extremity and to point out the presently recommended initial management of such patients.

SELECTION OF PATIENTS

The possibility of surgical replantation of a traumatically amputated extremity should be considered in every patient in whom this entity is encountered. It is obvious that surgical success will not be achieved in all such patients and equally obvious that if the procedure is not considered it will not be performed. If the patient is in reasonably good general condition, if the amputated extremity is available and not too badly damaged, and if facilities and personnel are available within a reasonable period of time, it seems likely that surgical success can be achieved in a significant number of patients. Contraindications to any surgical attempt at replantation would include poor general condition of the patient for either intercurrent reasons or because of the presence of major, multiple injuries. If the surgical attempt cannot be carried out within eight hours, it is probable that significant risk to the patient's life will be incurred without reasonable chance of limb survival. If tissue injury at the site of replantation is too extensive, the procedure cannot be carried out in a technically satisfactory manner.

MANAGEMENT OF THE PATIENT

The general condition of the patient is the physician's first concern. Hemorrhage from the site of amputation may be massive or surprisingly small. Massive hemorrhage can be controlled by pressure over the vessels until suitable clamps become available. It is obvious that if replantation is to be considered further damage to the exposed vessel ends is to be avoided or minimized. Nevertheless, these vessels should be ligated as close to the severed end as possible, particularly if the patient is to be transported a great distance. The ends of such sutures should be left long to permit easy identifi-

cation. Treatment of the blood volume deficit is second only to control of massive hemorrhage. Although blood transfusion is the method of choice, blood plasma or dextran can and should be used if shock is present before whole blood is available. It might be well to mention that associated injuries should be looked for and considered while dealing with the more obvious amputation.

The amputation wound should be disturbed as little as possible after hemorrhage is controlled. When hemorrhage is controlled and shock is treated, the major consideration is transport of the patient to a center where facilities and personnel are available for multi-discipline evaluation and treatment. No time should be lost in debriding the wound or in any other form of preparation. Grossly dirty wounds may be irrigated with sterile normal saline, but transport of the patient should not be delayed for this step. The wound should be covered with moist sterile dressings protected by heavy dry dressing or polyethylene film. A large dose of broad spectrum antibiotic should be given early in the course of treatment.

THE AMPUTATED MEMBER

The amputated part should be recovered promptly and evaluated. As little as possible should be done to the amputated part, but if a major vessel is readily accessible, 20 mgs. of heparin can be instilled. It is preferable to omit this if any dissection is necessary to expose a vessel. The open wound in the amputated extremity should be covered with a sterile, saline-moistened dressing, protected by dry dressing. The extremity should be kept cool preferably in iced sterile saline.

TRANSPORT OF THE PATIENT

Transport of the patient to a center where definitive treatment can be carried out is mandatory at the earliest possible time. The center should be notified by telephone as soon as this can be done, in order to make preparations for rapid handling of the patient. Information should be sent with the patient covering the following points:

1. Time, location, and nature of injury.
2. Initial evaluation of extent of injury.
3. A list of all drugs and fluids administered.
4. A note giving details of initial management of the wound in both the patient and the amputated part.
5. The patient's blood type if this has been determined.

SURGICAL REPLANTATION

Definitive replantation of the traumatically amputated extremity depends upon evaluation of the factors outlined above. The attempt consists of debridement of both the wound of amputation and the amputated part, massive irrigation of both areas, intramedullary fixation of the involved bone, vascular suture of both artery and vein, and metallic marking of nerve ends for future procedures. It seems clear that a successful result can be attained in many such instances and in properly selected cases, the risk should not be excessive. □

800 N.E. 13th Street, Oklahoma City, Oklahoma

GET OUT THE VOTE

Regardless of your political party affiliation or personal choice of candidates, the Council on Public Policy urges you to get to the polls on November 6th . . . and to see to it that your employees fulfill their responsibilities as citizens. "Get-Out-the-Vote" posters for your office door are available at OSMA headquarters, for the purpose of announcing that your office will be closed during certain hours while you and your employees vote. □

Applanation Tonometry

WILLIAM H. GARNIER, M.D.

THE METHOD of measuring intraocular pressure which is discussed in this review is of great value in the diagnosis and management of glaucoma. It is applicable in general office tonometry and in certain situations is definitely superior to the Schiotz technique.

The principle of applanation tonometry is the measurement of the force necessary to flatten a small corneal surface of constant size, or it is the measurement of the force required to establish a standard area of contact.[8] The Imbert-Fick law, on which applanation tonometry is based, states that the pressure in a sphere filled with liquid and surrounded by an infinitely thin membrane is measured by the minimum counterpressure required to flatten the membrane to a plane.[9] It can be thought of in this way:

$$\frac{\text{Weight (Force)}}{\text{Area}} = \text{Pressure}$$

The phenomenon of fluorescence makes it possible to delineate the standard area of contact. Fluorescein, if viewed with blue light, appears greenish-yellow and thus the applanated area is outlined.

Finally, accurate observation of the flattened area is rendered easy by the 10X magnification of the slit lamp.

The utilization of these unrelated principles and their adaptation to the Haag-Streit slit lamp became possible when Goldmann introduced his applanation tonometer in 1955.[1] This tonometer can be modified to employ other slit lamps, but its operation is far less quick and simple. Other applanation instruments had been introduced prior to this time, but none were accurate, simple and sturdy enough to meet the rigorous demands of practice.

The great virtue of applanation tonometry lies in the fact that it produces such a small volume displacement, 0.5 cu. mm. When indentation tonometry is performed a change in volume is produced, and this alters the original pressure. Thus the initial pressure, P_o, is not the same as the pressure with the tonometer in place, P_t. The Schiotz tonometer produces a displacement of 6-30 cu. mm. which corresponds to a variation in reading of from 10-30 mms. Hg.[10] The 0.5 cu. mm. displacement changes P_o only 2.5 per cent or less, and so, for all practical purposes $P_o = P_t$.

The Schiotz readings are further influenced by scleral rigidity and corneal curvature. The former is often altered in conditions commonly encountered in practice, as in myopia and after glaucoma operations, while deviations of the latter sufficient to lie outside the "normal" extremes of 7.3 to 8.25 mms. occur in probably eight per cent of people. These factors produce negligible effects on the applanation readings, however, so that here they may be disregarded. According to Schmidt,[10] the difference between P_o and P_t in the most unfavorable combination of high rigidity and small radius of curvature of the cornea would be only 7.7 per cent.

ACCURACY

It has been shown that a Schiotz tonometer may conform to all specifications and still have an overall error amounting to ±3.0 scale divisions. Small errors of ±1.0 scale unit are probably common. I have had an instrument returned after calibration with the admonition: "tensions derived from scale readings of three or less with this tonometer will not be accurate."

The Goldmann tonometer has only two parts which might induce errors in measurement. The prism which measures the flattened area is ground from a single piece of plastic. The newer balance uses a weight to apply the pressure. Both elements can be readily checked for accuracy. The manufacturer claims an average error of 0.5 mm. Hg.[6] I have not seen any report in the literature where the accuracy of the instrument was questioned; on the contrary it is usually lauded in this regard. Exact observation of the measured area is made easy by the 10X magnification of the slit lamp.

SCLERAL RIGIDITY

Modern ophthalmologists have been aware of the scleral rigidity factor since Friedenwald's[5] paper in 1937. Little attempt was made by the average clinician to apply it in a practical way until recently. One reason for this was the difficulty in measuring it accurately. Another was based on the observation that many cases of glaucoma could be treated quite satisfactorily while disregarding the concept. Although this is true, it is also true that it should be ignored only in those cases where it has been determined and found to be normal, i.e., 0.0215. A handicap is the lack of precise information regarding its physical and physiological bases.

As Becker[2] has stated, a serious error can occur where there is lower than average rigidity. Here one may be lulled by an acceptable Schiotz reading while the true tension is higher. Thus an erroneous judgment is formed as to the status of control and the effectiveness of therapy. If it is true that one-tenth of primary glaucoma patients go blind with the best possible treatment, it is probable that this figure includes some cases where available measures are not taken because the doctor fails to recognize that the disease is poorly controlled.

CLINICAL APPLICATIONS

One of the merits of the applanation tonometer is that it permits easy and accurate determination of the rigidity coefficient. However, if one is not interested, the value of the instrument merely as a tonometer is enough to justify its increasing use.

Its greatest usefulness is realized in the diagnosis and treatment of glaucoma. Becker and Shaffer[3] state: "At the present time the best method available for the early diagnosis of chronic simple glaucoma is the use of applanation tonometry and tonography with a water-drinking provocative test." In connection with tonography it permits the determination of an accurate P_o.

For the majority of ophthalmologists not doing tonography, and those in areas where it is not readily available, applanation readings can be very helpful in diagnosis of early and doubtful cases. One example is the patient whose tension runs from 25-29 mms. Hg. Schiotz, but without evidence of damage. If this patient has lower applanation readings, or is found to have a significantly higher rigidity coefficient, one feels much safer in continued observation without treatment. Another example is the patient with slightly elevated tension readings who shows no change or a fall in tension with the water provocative test. Becker and Gay[2] have provided an explanation for this by showing that a reduction of scleral rigidity of 30 per cent or more occurred in about one-fourth of patients following water provocative tests. The correct tension in these cases, often high enough to indicate the diagnosis, could be determined by applanation, but not by Schiotz tonometry.

A disease with many ophthalmologic complications is thyrotropic exophthalmos. In a series of cases by the same authors scleral rigidity was found to be reduced in all cases. In thyrotoxic exophthalmos the rigidity coefficient tended to be elevated. It is not clear why these variations occur, but the fact that they do may be utilized in differentiating the two types of exophthalmos.

A common condition where applanation tonometry is especially valuable is myopia. The association of reduced scleral rigidity with myopia was described by Friedenwald in 1937. Goldmann and Schmidt[10] recommend the performance of applanation tonometry on all myopic patients over 20 years of age who have three diopters or more of error. There is a sharp increase in axial length and therefore volume in eyes between —2 and —5 D., and this correlates with the decrease in rigidity. In high myopia scleral rigidity rises to normal and this might result from the inelasticity of a markedly stretched sclera.[2]

Following miotic therapy there is a reduced scleral rigidity, although in chronic simple glaucoma the rigidity value is thought to be normal. These points should be remembered in evaluating therapy. The reduced rigidity may persist for long periods when potent anticholinesterase agents are employed.

It is sometimes desirable to know the tension following surgery, trauma, and various inflammatory or degenerative states. In these one would hesitate to apply a 16.5 gm. tonometer to the cornea, but applanation may be done with safety. Instead of setting the dial at one gm., the usual starting point, it should be set at 0.5 gm. or even less. If the eye is soft, this will be nearer the correct tension, and will reduce the pressure applied to the globe. The only complication I have seen following this procedure was a choroidal detachment in a post-operative cataract extraction where the initial dial setting was not reduced. The detachment quickly disappeared and did no harm.

In cases of microcornea the horizontal diameter is less than 10 mms., but the eye is otherwise relatively normal. In these, the radius of curvature of the cornea is usually increased.[4] Friedenwald stated that a small radius of curvature is usually associated with a high coefficient of rigidity. Since such patients are predisposed to glaucoma they constitute diagnostic problems, even though they are rare. The Schiotz readings in these cases are not reliable without correcting for both curvature and rigidity, but the effect of these factors on applanation determinations are negligible, so they may be disregarded.

In a small number of cases following Schiotz tonometry corneal lesions develop. These are often punctate, suggesting a punctate keratitis, either traumatic or infectious, but sometimes superficial abrasions are seen. Where one uses chemical sterilization for the tonometer there is also the possibility of inadvertent epitheliolysis from this source. Clinically we tend to group such cases together unscientifically under a heading such as "tonometer keratitis." Although this may not occur often, it is embarrassing when it does occur and such cases may not clear for two to three weeks. I have not encountered any such disturbances with the Goldmann instrument. Chemical or viral lesions are possible no doubt, but it is unlikely that traumatic dissolutions would occur. If one employs a refined technique the method is innocuous.

COMMENT

Not all patients are equally good subjects. Excessive lacrimation dilutes the fluorescein and may give a lower finding than actually exists. This has been noted in the literature when considering the quenching effects of the anesthetic and the amount of dye to use.[7]

If one perseveres until he develops a facile technique in applanating, I believe any ophthalmologist will find the method practical, dependable, and rewarding. The technique is not difficult, but it does require some adroitness. Most of the criticism of it very likely hinges on this point. It is difficult to begin applanating without having had demonstrations, although one may understand the general principles of use.

I am indebted to Doctors Becker and Moses for both practical and theoretical instruction.

REFERENCES

1 Amdur, Joseph: The Applanation Tonometer, Arch. of Ophth. 63: 66, Jan., 1960.
2. Becker and Gay: Applanation Tonometry in the Diagnosis and Treatment of Glaucoma, Arch. of Ophth. 62: 211, Aug., 1959.
3. Becker and Shaffer: Diagnosis and Therapy of the Glaucomas, The C. V. Mosby Co., 1961, page 163.
4. Duke-Elder: Text-Book of Ophthalmology, Vol. 11, The C. V. Mosby Co., 1941, page 1277.
5. Friedenwald, J. S.: Contribution to the Theory and Practice of Tonometry, Amer. Jour. Ophth., 20: 985, Oct., 1937, No. X.
6. Haag-Streit Instrument Manual—Applanation Tonometer—page 2.
7. Moses, Robert A.: Fluorescein in Applanation Tonometry, Amer. Jour. Ophth. 49: 63, May, 1960, No. 5, Part II.
8. Moses, Robert A.: Goldmann Applanation Tonometer, Amer. Jour. Ophth. 46: 865, Dec., 1958.
9. Schmidt, Theodor F. A.: On Applanation Tonometry, Trans. Amer. Adad. Ophth. 65: 171, March-April, 1961.
10. Schmidt, Theodor F. A.: Goldmann Applanation Tonometer, Amer. Jour. Ophth. 49: 967, May 1960, No. 5, Part I.

National Bank Building, Stillwater, Oklahoma

CRYOTHERAPY: A Review and Evaluation

O'TAR NORWOOD, M.D.

IN SPITE of generally favorable reports, cryotherapy has never attained widespread use in the treatment of acne vulgaris. The basic technique, first described by Gireaudeau[1] in 1925, is still generally employed. Carbonic snow is poured into a mortar and flowers of sulfur added, usually in the amount of one-tenth of the total volume. Acetone is then added drop by drop until a homogeneous salve is obtained. This is collected on a piece of absorbent cotton and massaged rapidly on the affected areas. The time that the salve is left against the skin is variable, depending on the severity of the acne and the tolerance of the patient. In some of the milder cases a piece of gauze can be wrapped around the snow to reduce the discomfort from cold. Gireaudeau obtained best results in papulo-pustular acne.

Cryotherapy was first reported in English by Karp[2] in 1939 when he published fifty cases, reporting a 94 per cent cure. He stated that the average time required was four months, and that it was particularly valuable in pubertal acne. In 1940 Dobes[3] published 95 cases with excellent results, particularly in hard, indurated types. In 1941 Hollander[4] published 36 cases of post acne scarring with 90 per cent improvement. However, he stated that it had little effect on the active areas. In the same year, Eller[5] made brief reference to cryotherapy in a discussion of the various peeling agents available to the dermatologist. In 1924 Friedlander[6] described treatment in 25 cases of post acne scarring and concluded that there was no effect on scars, while in 1946 Zugarman[7] advocated the use of ethyl acetone instead of acetone because of the strong odor of the latter. In 150 cases he had results paralleling those of Dobes[3] in 1940. Wright and Gross[8] in 1949 used a piece of dry ice and applied it directly to the lesions in cystic acne. Their results in 2,000 cases were so good they gave up the surgical treatment of deep seated acne lesions. Dobes[9] described a simplified method of cryotherapy in 1951. Instead of making a slush, he merely wrapped the dry ice in a towel and dipped it into a mixture of Intradermal Sulfur and acetone. The towel containing the dry ice was then applied to the affected areas. With this technique he obtained a favorable response in 70 per cent of 120 cases and again had best results in the hard, indurated type. In 1953 P. de Graciansky and S. Boulle[10] again published the original Gireaudeau technique, and in addition they described a method that could be used on cases where even more peeling was desired. They first gave the patient an erythematous dose of ultraviolet light and then used cryotherapy according to Gireaudeau. In 1958 Schonberg[11] treated 56 cases of post acne scarring with liquid nitrogen with very satisfactory results and 40 cases of active acne with good results. In the same article he reported good results with Fluro-Ethyl® refrigeration. In 1960 Gueli and Bella[12] again described the Gireaudeau tech-

nique. They had good results in over 200 cases with the Gireaudeau technique and with the use of 30 per cent trichloroacetic acid as described by P. de Graciansky.[10] They treated each patient five times and had them return at intervals in order to maintain a good cosmetic appearance.

In this study a modified form of cryotherapy was employed in the study of 58 patients and will be reported.

METHOD AND MATERIALS

The problem of storing the carbon dioxide snow was overcome by using a carbon dioxide fire extinguisher. The carbon dioxide fire extinguisher was exploded into a pillow case, and the snow thus obtained was made into snowballs about the size of an orange and wrapped with unfolded four by four's. These were then dipped into the acetone and applied to the face in a rubbing motion until whiteness appeared. When more intense cold was desired on the individual deep cystic lesions or areas, a dry paste was made with the acetone and carbon dioxide and applied directly to the areas with a spatula.

In half of the treatments precipitated sulfur was added to the mixture; the results were the same with or without sulfur. The sulfur apparently had no advantage and was offensive to the patients.

The amount and intensity of treatment required to produce desquamation or actual peeling varied with individual patients. The first treatment was used as more or less of a test. The following week, depending upon the response to the first treatment, the intensity of application was increased or decreased to produce the desired result. The best results were obtained with the hard cystic indurated types which required actual peeling.

RESULTS AND COMMENTS

A total of 58 patients were treated, and the number of treatments varied from four to sixteen. The patients were followed at weekly intervals for approximately two months after the initial course to determine both the duration of the results and how frequently retreatment was necessary.

Twenty-two patients or 38 per cent had good results, thirteen patients or 22 per cent were classified as fair, and 23 patients or 40 per cent showed no change. This classification is explained as follows:

Good: 22—Treatment kept new pustules from forming or to a minimum. In severe cases the new pustules were milder, shorter in duration, and dried up sooner without serious scar. Comedones disappeared or were extracted easily. The very mild cases were considered "good" only if the acne was kept in a barely noticeable phase.

Fair: 13—In these cases the reaction was mixed—one week they would be better, the next week not so good. In general, however, there was a slight improvement in the overall course of the treatments. The same degree of improvement could probably have been accomplished with chemical keratolytics and astringents.

No Change: 23—These patients showed no change, and in some cases the treatments seemed to irritate the acne.

An accurate appraisal of any acne therapy is difficult because of the normal fluctuation of acne even without treatment. However, two significant facts were learned from this study. Juvenile type acne did not respond to cryotherapy and the hard, cystic, indurated type with many comedones did respond. Twenty-five patients had superficial pustular juvenile acne. Of these, only four had good results, nine had fair results, and in 12 there was no change. This type acne seemed much more labile and sensitive to treatment. In several of these cases the treatment definitely aggravated the acne. Of the 22 good cases in the study, all were of the indurated cystic variety. The good results were not always apparent immediately. After peeling had been obtained the patients were placed on mild chemical keratolytics and astringents, and within one or two weeks the good results were obvious. These good results were maintained up to two months without retreatment.

There were five patients with post acne scarring in addition to active acne. There was no change in the scars after treatment.

Although there were no clear-cut contraindications to treatment, there were two relative disadvantages noted. In some cases where peeling was obtained, the face was

irregularly pink, scaly, and hyperpigmented during the course of treatment. In persons with a good sun tan, treatment should probably be postponed. The cryotherapy peeled off the tanned skin and left blotchy depigmented areas.

The results of this study were not so favorable as those reported previously. However, cryotherapy is an excellent keratolytic and in cases where exfoliation or peeling appears indicated good results may be expected.

SUMMARY

A review of the literature finds previous reports on cryotherapy conflicting but generally quite favorable. A modified technique is described. The problem of storing carbon dioxide was overcome by using the snow formed when a carbon dioxide fire extinguisher is exploded into a pillow case. Sulfur was deleted from the mixture in one-half of the treatments of each patient, and the results were the same, with or without sulfur. The results of treatment in 58 cases are presented. Thirty-eight per cent had good results, 22 per cent had fair results and in 40 per cent there was no change. The best results were obtained in both the hard indurated cystic acne with many comedones. The poorest results were found in superficial, pustular, juvenile acne. It is concluded that cryotherapy is a valuable adjuvant in the treatment of selected cases of acne vulgaris. □

BIBLIOGRAPHY

1. Gireaudeau, P.: La cure d'exfoliation par le melange de neige carbonique, acetone et soufre dans l'acne, Bull. Soc. Franc de Dermat. et Syph. 36: 654-657 (July) 1929.
2. Karp, F. L.; Nieman, H. A.; and Lerner, C.: Cryotherapy for Acne and Its Scars, Arch. Derm. and Syph. 39: 995 (June) 1939.
3. Dobes, W. L., and Keil, H.: Treatment of Acne Vulgaris by Cryotherapy (Slush Method), Arch. of Derm. and Syph. 42: 547 (Oct.) 1940.
4. Hollander, Leston; and Shelton, J. M.: An Evaluation of Cryotherapy in the Treatment of Post acne Scarring, Penna. Med. J .45: 226-228 (Dec.) 1941.
5. Eller, J. J., and Wolff, S.: Skin Peeling and Scarification in the Treatment of Pitted Scars, Pigmentation and Certain Facial Blemishes, J.A.M.A. 116: 934-938 (March) 1941.
6. Friedlander, H. M.: Failure of Cryotherapy in the Treatment of Acne Scars, Arch. of Derm. and Syph. 46: 734 (Nov.) 1942.
7. Zugarman, I.: Formula for Cryotherapy (with CO_2 Slush) for Acne and Post Acne Scarring, Arch. of Derm. and Syph. 54: 209-210 (Aug.) 1946.
8. Wright, Carrol S., and Gross, E. R.: Solid Carbon Dioxide Therapy for Cystic Acne, Arch. of Derm. and Syph. 59: 664-665 (June) 1949.
9. Dobes, W. L.: Simplified Method of Cryotherapy for Acne Vulgaris, Southern Med. Journ. 44: 546-549 (June) 1951.
10. P. de Graciansky; S. Boulle; and M. Boulle: Cryotherapy According to the Gireaudeau Technique and Associated Methods. Semaine Hop. Paris 29: 3373-3375 (Oct.) 1953 Fr.
11. Schonberg, I. L., and Litt, Z. L.: Fluro-Ethyl Cryotherapy: An Adjuvant in the Treatment of Acne Vulgaris and Post Acne Scarring, Ohio State Med. Journ. (Aug.) 1958.
12. Gueli, F., and Bella, S.: Medicated "Cryomassage" in the Treatment of Acne, Minerva Derm. 35: 225-227 (June) 1960 (Italian).

921 N.E. 13th Street, Oklahoma City, Oklahoma

ABSTRACTS

ANABOLIC PYRAZOLES

The administration of androstanopyrazole or androstenopyrazole to a group of 31 men and women induced nitrogen, phosphorus, and potassium retention and a gain in weight.* A metabolic study of these compounds showed the former (stano) to be the more active of the two. Both products showed no significant virilizing effects in the female subjects such as hirsutism, acne, or voice change. The libido and potentia of hypogonadal men was found to be enhanced. Postmenopausal women were relieved of their hot flashes, and there was a reduction in the excretion of urinary gonadotropin. All subjects showed creatinuria.

Assays of the serum lipids and lipoproteins showed a tendency toward lowering of the serum cholesterol and phospholipids. There was also a drop in the α-lipoproteins and low-density lipoproteins. The lowering of the α-lipoprotein is the reverse of the effect obtained when estrogen is given, and raises the question of what effect these pyrazoles might have in enhancing atherogenesis in women.

(REVIEWER'S NOTE: For the physician who is constantly bedeviled by patients anxious to become plump and lusty [or lean and spare] there is as yet no relief in view. Although the subjects in this study were able to add a few pounds it is noteworthy that this effect will not continue, and that once this increase has been achieved, further treatment will not produce additional weight gain. This parallels the experience of Smith and Johnson [J. Am. Geriatric Soc. 9: 304, 1961] in a study using a different anabolic agent. Nonetheless, these products would appear to fill a need in aging and debilitated patients, and further work with such compounds is certainly in order.)

*Metabolic and Serum Lipid Effect of Methylandrostane and Methylandrostene Pyrazoles. R. Palmer Howard and Robert H. Furman. Journal of Clinical Endocrinology and Metabolism 22: 43-51 (January) 1962.

RELIEVING THE PAIN OF CHRONIC PANCREATITIS

DuVal and Enquist report that in 28 cases of chronic pancreatitis treated by caudal pancreaticojejunostomy, 70 per cent were relieved of their pain.* These patients represent a consecutive series of cases operated between 1953 and 1958, and provide the opportunity for follow-up evaluation into the eighth post-operative year.

About 80 per cent of these patients were consumers of large quantities of alcohol, and personality disturbances were common. Over half had evidence of calcification of the pancreas.

Removal of the distal 3-4 cm. of tail of the pancreas and anastomosis of the stump to the jejunum provided immediate pain relief to 18 of the patients. The pancreatic duct was found to have a transverse diameter in excess of three mm. in most instances. Of the eight patients who did not obtain relief by this procedure, sympathectomy and/or total pancreatectomy brought relief to only two.

The unrelenting character of the disease is brought out by the fact that only nine of the 20 patients who had excellent pain relief by the decompression procedure were still alive at the time of writing. Diabetes and pulmonary tuberculosis were particularly frequent sequelae.

The need for proper selection of patients for pancreaticojejunostomy is evident. Those having acute and recurring acute pancreatitis will obviously receive no benefit from this procedure. On the other hand, those chronic cases in which the alcohol factor looms large, and which had diabetes and calcification of the pancreas, obtained the most gratifying results.

(REVIEWER'S NOTE: The authors show beseeming modesty and a high degree of clinical candor when they point out that although this procedure has provided much comfort for their patients, it does not eradicate the disease. Nevertheless, the patient and his physician who must contend with the many nutritional deficiencies and digestive tract symptoms of pancreatic insufficiency have good reason to be grateful for this measure of comfort.)

*The Surgical Treatment of Chronic Pancreatitis by Pancreaticojejunostomy: An 8-year Reappraisal. Merlin K. Duval, Jr., and Irving F. Enquist. Surgery 50: 965-969 (December) 1961.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Response of Isolated Perfused Kidneys to Epinephrine. D. M. Worthen, O. N. Anderson, and L. B. Hinshaw. American Journal of Physiology **202**: 97, 1962.

Multiple Passive Transfer of the Delayed Type of Hypersensitivity in Humans. K. Jensen, R. A. Patnode, H. C. Townsley, and M. M. Cummings. American Review of Respiratory Diseases **85**: 373, 1962.

Experimental Centrogenic Arrhythmias. I. T. Parker, C. G. Gunn, and T. N. Lynn, Clinical Research **10**: 179, 1962.

Chromatographic Patterns of Individual Gastric Juice Specimens from Normal Human Subjects. J. D. Welsh, T. Russell, and S. G. Wolf. Journal of Clinical Investigation **41**: 660, 1962.

A New Type of Substrate for Phosphodiesterase Enzymes. P. W. Wrigler. Federation Proceedings **21**: 242, 1962.

Reprints are usually available from the senior author, c/o Mrs. Joan Campbell, Veterans Administration Hospital, 921 N.E. 13th Street, Oklahoma City, Oklahoma.

FACULTY NEWS

Research Fellowships Announced

Eighteen medical students have been awarded research fellowships for the 1962-63 academic year.

They were chosen by the faculty's Student Research Committee on the basis of past achievement and project plans to receive awards averaging $600 each made available by the National Institutes of Health, the National Science Foundation, a Cardiovascular Area Grant from the National Heart Institute, Lederle Laboratories and the Tobacco Industry Research Committee.

The student research fellows conduct their scientific studies during vacation periods or on a part time schedule during the school year, working under guidance of a faculty sponsor.

Fellowship winners are: Jonne Louise Barney, Anadarko, Manuel Hensley, DeQueen, Arkansas, Gary Rahe, Crescent, Stanley S. Skaer, Augusta, Kansas, Mark Tong, Seoul, Korea, Marvin Weisbard, Oklahoma City, Burt C. Montague, Lawton, Thomas R. Russell, Meeker, Robert J. Capehart, Muskogee, and Stanley Brunn, Brooklyn, New York, all sophomores;

Robert P. Metcalf, Hollis, Bruce Naylor, Okeene, Don D. Sullivan, Shawnee, Ronald Sheets, Woodward, and Robert D. Fisher, Ada, sophomores; Richard T. Coussons, Houston, Texas, Jack P. Gunter Jr., Hot Springs, Arkansas, and Ronald Strahan, Canton, seniors. □

Conference of Medical Society Officers Announced

HOWARD

BENNETT

The Council on Public Policy of the Oklahoma State Medical Association has announced its first major activity of the year, a statewide Conference of County Medical Society Officers. Designed to provide county, state and national medical leaders with an opportunity to discuss projects and solve mutual problems, the meeting is set for October 28th at the Skirvin Hotel in Oklahoma City.

Council chairman Rex E. Kenyon, M.D., hopes the 1962 event will set the pattern for future meetings on an annual basis, and that it will result in more effective liaison between the three levels of organized medicine.

"Only the strength and unity of our national, state and county medical groups block the planned destruction of a health care system which is unparalleled in the history of the world", Kenyon said.

"As physicians, we owe our profession and the American people a determined fight. We have many allies, but the responsibility of leadership must be ours.

"To live up to this responsibility, the profession must achieve the very highest level of unity, and through our individual and collective deeds, we must stimulate large-scale support from the general public."

As a step in this direction, the Sunday afternoon meeting will be held in the Skirvin's Crystal Room from 1:00 p.m. until 5:45 p.m. It will be followed by a hospitality hour and dinner.

Invited to attend are county society presidents, secretaries, public relations chairmen and legislative committee chairmen. Representing the OSMA will be the general officers of the state group, the Council on Public Policy and the Federal Legislative Committee.

In addition, key officers of the OSMA Woman's Auxiliary have been included, as well as officers of allied state organizations.

AMA Leader Scheduled

Highlighting the program will be the appearance of Ernest B. Howard, M.D., Assistant Executive Vice-President of the American Medical Association, who will first outline the AMA organizational structure and the services it performs for the profession and the public. Then, in a separate presentation, Doctor Howard will speak as the head of the AMA's Legislative Task Force, as he participates in a symposium on legislative action at the national, state and local levels of medical organization.

Participants in the conference will hear the public image of the profession discussed by an expert, Charles L. Bennett, Managing Editor of the Daily Oklahoman and Oklahoma City Times. Mr. Bennett's talk will be entitled "People Who Read Newspapers."

Mr. Steve Stahl, Executive Vice-President of the Oklahoma Public Expenditures Council will offer the conferees the benefit of his vast experience as an analyst of governmental affairs. In his presentation, "On Your Side of the Fence", he will remind county medical society leaders of the many elements of society which share the political philosophy of organized medicine, and will suggest effective ways of harnessing this power in the defense of health care freedom.

"Coping with Congress" will be the subject of Milton Davis, M.D., Dallas, national treasurer of the American Medical Political Action Committee.

Other speakers on the program will discuss community service projects designed to improve the public image of the profession. How-to-do-it materials will be supplied to the county officers to assist them in organizing such projects.

The program will conclude with a short presentation on Services of the OSMA. R. R. Hannas, M.D., Chairman of the Council on Postgraduate Education, will announce details of eight decentralized refresher courses to be offered in 1962-63, as well as plans for twelve educational telecasts. An OSMA Program Bureau for County Medical Societies will be inaugurated at the meeting. □

Kerr-Mills Program Expansion Approved by House of Delegates

In a brief but turbulent special session on September 16th, the House of Delegates of the Oklahoma State Medical Association voted to approve more liberal income limits for determining those eligible to receive health care benefits under Oklahoma's Medical Assistance for the Aged Program (Kerr-Mills Act).

Whereas persons over age 65 could previously qualify for benefits if their annual incomes were below $1,500 for a single person and $2000 for a couple, the recommended change will increase the maximum income allowances to $2000 and $3000, respectively.

The affirmative action of the Delegates, which came after heated debate on the issue, was communicated to the Department of Public Welfare through C. M. Bielstein, M.D., OSMA member and chairman of the Department's Professional Advisory Committee.

OSMA approval of the liberalization of the program followed on the heels of a favorable recommendation by the DPW Professional Advisory Committee (subject to subsequent ratification by the OSMA), and the public endorsement of the proposal by Governor J. Howard Edmondson.

On September 18th, the Oklahoma Public Welfare Commission, policy-making body of Oklahoma's welfare programs, met in regular session and approved the adjustment in eligibility requirements for MAA recipients. The change in maximum income limitations is effective for all admissions beginning after midnight September, 18th, 1962.

Only income limits were changed; allowable liquid and fixed assets, life insurance, etc., were kept at previous levels.

Kerr Concerned

Swift action on the measure by all interested groups followed Senator Robert S. Kerr's expression of concern over the relatively few senior citizens being helped by the health care provisions of the Kerr-Mills Act implementation in Oklahoma.

It was revealed that only 4,281 cases were approved for payment in Oklahoma in nearly two years' operation of the Medical Assistance for the Aged Program. In disapproving 1,048 applications during the same period, the Department of Public Welfare found that most were flunking the means test because of excessive income or resources.

Senator Kerr challenged his home state to make the Kerr-Mills Act work effectively, setting an example for other states to follow. As the leading opponent of the Administration's Social Security Health Benefits Act, he is basing his argument on the superiority of the Kerr-Mills approach.

Quorum Lost

After deciding the MAA issue, Delegates argued for and against an effort to press for a reinstatement of Oklahoma's lien law and family responsibility law. While the sentiment seemed to favor such legislation, as deterrents to unnecessary use of welfare funds, it was finally decided to defer action at this time.

As Marshall O. Hart, M.D., Speaker of the House of Delegates, proceeded to other items on the agenda, the Chairman of the Credentials Committee, C. Riley Strong, M.D., reported that a quorum had been lost. Doctor Hart adjourned the meeting.

Trustees Meet

Meeting on the previous day, September 15th, the Board of Trustees of the OSMA not only endorsed the MAA change, but also took a significant step toward improving the public relations program of the association.

Responding to the presentation of Rex E. Kenyon, M.D., Chairman of the Council on Public Policy, the Trustees voted to make available up to $10,000 out of association savings for the purpose of inaugurating stepped-up, diversified public relations activities. In addition, the Trustees will recommend a dues increase at the next annual meeting in order to sustain the public relations effort.

Included in Doctor Kenyon's plans for the 1962-63 organization year are: a Conference of County Medical Society Officers (see page 428); television question and answer panels; health columns for weekly newspapers; a more active speaker's bureau; radio and television spot announcements; two or three half-hour television productions on socialism, medical education and, perhaps, the cost of medical care; and, a legislative tour to Washington to make direct contact with Oklahoma's lawmakers.

Doctor Kenyon stressed the inadequacy of the Council's present budget of $2,500 annually, and the Trustees agreed that the necessary job could not be done without additional financing.

OSMA Secretary-Treasurer Mark R. Johnson, M.D., told the Trustees that the association was just managing to "stay even" in its fiscal operations for the first quarter of the year. He explained the tight budget by pointing out that decreased advertising revenue from the *Journal* has resulted in a close balance between income and expense, despite the fact that spending has been curtailed far below the 1960 and 1961 levels.

Advertising prospects are expected to improve, but it is doubtful that the *Journal* will regain all it has lost. Losses are attributed to Senator Kefauver's prolonged purge of the drug industry.

In other actions, the Board of Trustees:

- Awarded a 50-year-pin to Paul N. Atkins, Sr., M.D., Tulsa.
- Approved continued OSMA sponsorship of the annual essay contests of the American Association of Physicians and Surgeons, and the Governor's Committee on Employment of the Handicapped.
- Reaffirmed traditional sponsorship of the annual banquet of the OU Chapter of the Student American Medical Association.
- Approved a resolution which calls for changes in city building codes, to require installation of safety glass where large panes of glass are used in construction. □

Seat Belts Save Lives

Seven out of every ten Americans who drive a car will have a traffic accident within the next five years. This is a sobering fact.

There are approximately 12,000,000 motor vehicle accidents occuring in the United States each year. These accidents injure in the neighborhood of 1,500,000 people and kill over 38,000. Intensive studies made at the Cornell University Medical School indicate that the risk of injury in automobile accidents can be reduced by as much as 50 per cent by the use of seat belts.

Doctor J. O. Moore, while Director of the Cornell Research Project, stated: "It is our opinion, based on the relatively massive evidence available that seat belts are the most important single, economical, feasible device available to control trauma associated with automobile accidents throughout the Nation."

Because considerable confusion and doubt existed regarding what the actual value of an automobile seat belt is in an accident, the special committee on Traffic Safety of the 85th Congress held hearings on this subject on April 30, 1957. All but one expert testified in favor of the use of automobile seat belts.

It was the opinion of the Subcommittee on Traffic Safety, after listening to many witnesses, that seat belts, properly manufactured and properly installed are a valuable safety device and careful consideration for their use should be given by the motoring public.

In the *A.M.A. News*, November 14, 1960, the editor of this newspaper of American medicine highly recommended seat belts. In this editorial, it was pointed out that traffic accidents (as a cause of death) rank third behind cancer and cardiovascular diseases. Among the country's youth, in the age bracket 15-25, automobile accidents are the Number One killer. He also proclaimed that the universal use of seat belts would have saved thousands of lives and reduced serious injuries by more than 50 per cent.

Case Histories

Dr. Charles B. McCall, Memphis, Tennessee physician:

Doctor McCall said, "I had always put off getting seat belts, until my father was in a wreck and was thrown through a windshield. Then I got seat belts. About six months ago—last December, I was driving by myself. I made an error in judgment. My car collided with a train.

> The OSMA Committee on Safety encourages association members to cooperate in Automobile Safety Belt Campaigns in their local communities.
>
> Civic groups, such as the Kiwanians and Jaycees, are working throughout the state to increase the installation and use of safety belts.
>
> Any county society or its members desiring safety belt information or promotional material may obtain it by contacting the OSMA executive office. Such materials as posters for the physician's office, handout material, and in fact, a complete automobile safety belt portfolio describing how to conduct a complete community program, are available on request.
>
> The Safety Committee, using the Seat Belt Resolution adopted last May by the OSMA House of Delegates as their guide, further requests that individual physicians encourage their patients to install and use automobile safety belts.

My car's right front fender caught on the wheel of the train. The car was slung sideways into the train, and at that point, I left the conscious world, but didn't leave my car.

"My car looked as if it had been run through a meat grinder. It wasn't wrecked, it was shredded."

Doctor McCall escaped with a fractured arm, fractured ribs and a few bruises. "The seat belts saved me."

Lt. Col. John Paul Stapp, Airforce Surgeon:

Col. Stapp has subjected himself to crash stops from 632 miles an hour (faster than a .45 caliber bullet) to a stop within 1.4 seconds. This is the equivalent of striking a brick wall with an automobile traveling at 120 miles an hour. Held in his seat by safety belts, Col. Stapp suffered no disabilities.

Mrs. George J. Hecht, as told by her husband, Mr. George J. Hecht, publisher, *Parent's Magazine:*

"While my wife was driving on the Thruway, a car sideswiped her, causing her to swerve to avoid a collision. Although she had been going only 35 miles per hour, she hit the light pole with sufficient force to break it off and plunged into the river on the other side.

"How could she have possibly avoided serious injury? She escaped —I might say she survived—because she had heeded my warning: The impact of the crash did not pitch her through the windshield or out on the pavement, as so often happens, because her seat belt had been securely fastened. Although shaken by the ordeal, she suffered only a minor cut over one eye."

Laws in States

The passage of seat belt laws in New York and Virginia appear to have significance for the entire country. New York is requiring that all new cars sold in that State after June 30, 1964 be equipped with safety belts in the front seats. The measure passed by Virginia's General Assembly would apply to 1963 models. Wisconsin also requires seat belts as of October last year. Since automobiles must meet these requirements in three states, the safety belt will doubtless soon be standard equipment. That will mean large-scale saving of human life.

In the other 49 states, it is estimated that only five per cent of the automobiles are equipped with this safety device, and unfortunately, the driver most in need of such protection for himself and his family is

usually the one who sits on his belt until it is too late.

How Do Seat Belts Work?

Without seat belts, in the event of a sudden stop, or smash-up, people in an automobile would (as they have for years) continue moving forward into, or through the windshield, into each other, or even to be impaled by the steering wheel, or thrown out of the automobile as the door springs open. Seat belts hold the hips down, keeping the body from flying through the air.

Seat belts do the following to keep people alive in a crash:

(1) Prevent ejection (you have five times the risk of death if you are thrown from the car).
(2) Lessens injury inside the car.
(3) Spreads the impact over a large area of the body.
(4) The belt webbing stretches, thus extending the stopping distance — like jumping on a trampoline, as compared to walking into a door.
(5) Seat belts hold you in your seat on sudden stops, quick turns and bumpy roads, adding to your driving comfort.
(6) Seat belts prevent fatigue by preventing slouch and muscular activity needed to keep your seat as the car bounces, twists and turns down the highway.

How to Choose The Right Belt

Choosing a seat belt need not be a problem if you insist on an approved belt that measures up to the safety belt standards of the Society for Automotive Engineers. If the seat belt is approved by the Society for Automotive Engineers. These standards cover such matters as breaking strength, ease of releasing buckle and resistance to abrasion and corrosion.

The Oklahoma State Medical Association, the National Safety Council, American Medical Association and the U. S. Public Health Service report that seat belts can protect you, your family — your patients and members of their families — from death or critical injury. □

Oklahoma City Clinical Society To Meet

An outstanding program of postgraduate teaching has been outlined for the 32nd Annual Fall Conference of the Oklahoma City Clinical Society to be held at the Sheraton-Oklahoma Hotel on October 29, 30, 31, 1962.

Lectures and discussions by fifteen guest speakers selected from various medical and teaching centers throughout the nation will be presented throughout the three-day meeting. In addition to the general assemblies, there will be specialty lectures, coffee conferences, a clinical pathologic conference and daily roundtable luncheon question and answer sessions.

On Monday evening, October 29th, a social hour will be followed by eight specialty group dinners. A dinner-dance, sponsored jointly by the Oklahoma City Chamber of Commerce and the Oklahoma City Clinical Society, will be held at the Skirvin Tower Hotel on Tuesday evening. Featured guest for the evening will be a nationally known speaker, Mr. J. Roger Deas, representative of the American Can Company of New York City.

Speakers Named

Appearing during the conference will be: Ralph C. Benson, M.D., (Obstetrics), Portland, Oregon; John W. Duckett, M.D., (Surgery), Dallas, Texas; Edward A. Dunlap, M.D., (Ophthalmology), New York City; Edward A. Gall, M.D., (Pathology), Cincinnati, Ohio; Wallace B. Hamby, M.D., (Neuro-Surgery), Cleveland, Ohio; J. Raymond Hinshaw, M.D., (Surgery), Rochester, New York; William Hollander, M.D., (Medicine), Boston, Massachusetts; Otis F. Jillson, M.D., (Dermatology), Hanover, New Hampshire;

Vincent C. Kelley, M.D., (Pediatrics), Seattle, Washington; Carroll B. Larson, M.D., (Orthopedic), Iowa City, Iowa; Ted F. Leigh, M.D., (Radiology), Atlanta, Georgia; Herbert C. Modlin, M.D., (Psychiatry), Topeka, Kansas; Edmund R. Novak, M.D., (Gynecology), Baltimore, Maryland; Richard J. Reitemeier, M.D., (Medicine), Rochester, Minnesota; and, Ben H. Senturia, M.D., (Otolaryngology), St. Louis, Missouri.

The American Academy of General Practice has approved the meeting for 18 hours Category I credit.

An invitation is extended to all physicans who are members of their county medical societies to attend this meeting. Registration fee of $20.00 includes all features of the conference.

State M.D.'s Oppose Compulsory Social Security Coverage

At the request of the Board of Trustees of the OSMA, President Carlock is surveying the entire membership on the question of compulsory coverage of physicians under title II of the Social Security Act.

While returns from the mail ballot are still being received by the Executive Office, it appears at this time that about 75 per cent of Oklahoma physicians prefer to plan their financial futures independently of the government.

Out of 1129 replies, 839 voted against compulsory coverage of physicians, and 276 favored it. There were 14 respondents who were undecided.

The AMA is requesting the sentiment of its constituent state associations on this subject, since there is increasing pressure nationally for organized medicine to drop its opposition to social security coverage. □

Ob-Gyn Board Preparatory Course

A board preparatory course in obstetrics and gynecology will be held in the Spring of 1963 in Houston, Texas. Tuition for the course which will cover obstetrical and gynecological pathology, endocrinology and radiotherapy, will be $100.00. Write the Department of Obstetrics and Gynecology, Baylor University College of Medicine, Houston. □

Annual Meeting Plans Underway

The dates of the 57th Annual Meeting of the Oklahoma State Medical Association in Tulsa have been revised to Friday through Sunday, May 3-5, 1963, it was announced last month by Doctor Donald L. Brawner, General Chairman.

These replace the originally announced dates of May 4-6.

New plans call for the OSMA Board of Trustees to meet on Thursday, May 2. The House of Delegates will convene on Friday, May 3, with general scientific sessions scheduled concurrently. The popular Americanism luncheon and afternoon session on topics of economy, government and politics, which was so well received at the 1962 annual meeting, is tentatively scheduled for the same day.

The fireside conferences, at which physicians visit roundtable discussions of practical scientific topics, will be held on Friday evening, May 3. Jointly sponsored by the American College of Chest Physicians, this popular feature of the 1962 convention will be expanded to include pediatrics, obstetrics and gynecology, radiology, general surgery and pathology. A social hour and dinner will precede this event.

General scientific sessions are scheduled for all day Saturday, May 4, and on Sunday, May 5, until 1:00 p.m., at which time the convention will close. Many specialty groups plan annual meetings on Sunday afternoon and evening, May 5, most of which will be open to all convention registrants.

An afternoon session on Saturday, May 4, will feature a discussion of financial problems, investments, estate building, insurance, office finance and legal problems in everyday practice.

The President's Inaugural Dinner Dance will be on Saturday evening, May 5, opening with a social hour. The banquet program will feature the inauguration of Doctor Peter E. Russo of Oklahoma City as President of the Oklahoma State Medical Association. Four hours of dancing will conclude the evening's entertainment.

All sessions, including the dinner dance, will be at the Mayo Hotel of Tulsa.

Commercial exhibits and the Doctors Hobby Show will be on the 16th Floor of The Mayo with additional exhibits and general registration in the Main Lobby.

Doctor Howard A. Bennett, Program Chairman, said last month that several visiting guest speakers had already been committed. Program details will be completed by January 1st.

A prospectus will be mailed to technical exhibitors in early November. Space will be allocated as available on a first-come-first served basis.

Mrs. Milton L. Berg, Tulsa, President of the Woman's Auxiliary to the Oklahoma State Medical Association, announced last month the annual meeting of the group would also be on May 3-4. Business sessions will be at The Mayo, while the location of the Auxiliary's annual style show and luncheon will be announced later.

A record attendance of Oklahoma physicians is anticipated. □

Pediatric Colloquy To Be Held in Tulsa

The Fourth Annual Pediatric Colloquy will be held at Hillcrest Medical Center and the Tulsa Psychiatric Foundation in Tulsa on November 16-17. Theme for this year's program will be "Problems of the Urogenital System."

General Practitioners, pediatricians and urologists are urged to attend this symposium. Additional information concerning the colloquy is obtainable from Leonard L. Kishner, M.D., Hillcrest Medical Center, Tulsa 4, Oklahoma. □

AMA To Meet in L.A. in November

The 1962 clinical meeting of the American Medical Association will be held November 25-28 at Los Angeles.

An attendance of 12,000 is anticipated, half of them physicians. General arrangements are under the direction of Wilbur Bailey, M.D., past president of the Los Angeles County Medical Association and of the California Medical Society.

The four-day meeting will open at noon Sunday, November 25, and will conclude at 5:30 p.m. Wednesday, November 28. House of Delegates headquarters will be in the Biltmore Hotel.

More than 100 papers will be presented on the scientific program and more than 200 industrial and scientific exhibits will be displayed at the Shrine Auditorium.

The program on viral hepatitis will present the most recent findings in studies of the only infectious disease which has shown an increase in the United States in recent years. Among those reading papers will be Joseph D. Boggs, M.D., of Northwestern University Medical School. Doctor Boggs gave a short paper in June, 1961, at the AMA's annual meeting in New York City, reporting on studies that indicated an approach to developing a hepatitis vaccine.

The aerospace medicine program will feature papers by several physicians who have a leading part in the astronaut program, and also will include presentations by medical directors of an air line and an aircraft manufacturer regarding medical problems encountered in commercial aviation.

Air pollution will be studied from various aspects, with special emphasis on air pollutants that may cause physical ailments that require medical treatment.

Two units of the program will deal entirely with cancer, one on the etiology and pathogenesis of cancer and the other on new developments in chemotherapy for cancer. In addition a number of papers on other as-

pects of cancer will be presented on several other segments of the program.

Highlights of the program are as follows:

Sunday afternoon — Air pollution and pulmonary disease.

Monday morning — Viral hepatitis; cineradiography; general surgery; clinical nuclear medicine.

Monday afternoon—New approaches to depression and suicide; anesthesiology; thoracic surgery; disturbances of growth in children.

Tuesday morning — Etiology and pathogenesis of cancer; forensic medicine in clinical practice; urology.

Tuesday afternoon — Chemotherapy of cancer; neurosurgical program; gynecological and obstetrical program.

Wednesday morning—Medical management of cardiovascular disease; symposium on dermatologic surgery; viruses.

Wednesday afternoon — Aerospace medicine; orthopedics; ear, nose and throat. □

Diabetes Week: November 11-17

Continuing its all-year effort to find unknown diabetics and guide them to medical care, the American Diabetes Association will sponsor Diabetes Week November 11-17. The ADA works through 47 local Affiliate Associations and through approximately 900 County Committees on Diabetes organized within the state and county medical societies.

According to Hugh Jeter, M.D., county and state chairman of Diabetes Education and Detection Committee, "Out of every 120 patients that come into a physician's office, **one** may be an unknown diabetic. Detecting diabetes as early as possible is the responsibility of every physician." The ADA is urging physicians to test every patient who comes in the office during Diabetes Week and to test all patients at least once a year.

Cooperation of every Oklahoma physician is essential if unknown diabetics are to be brought under medical care and thus allowed to remain productive citizens of the state. Testing methods are now simple, fast and sure. Chairmen of county committees may write to the ADA, 1 East 45th Street, New York 17, New York and receive, free of charge, the following test materials: Clinitest, Sugar Test Denco, Clinistix and Dreypak. □

OSMA Scholars Receive Awards

Walter E. Brown, M.D., OSMA past-president and member of the Financial Aid to Education Committee, is pictured above presenting $500 OSMA scholarship checks to the top five students of the O.U. School of Medicine's 1962 freshman class. Receiving scholarship checks at September 6th ceremonies were (left to right) Edward Gwin IV, Ada; William H. Smith II, Norman; Muriel E. McGlanery, Mooreland; John Junker, Edmond; and, John F. Schuhmacher, Alva.

OSHA Honors Nine State Volunteers

Thomas N. Lynn, M.D., a member of the Board of Contributing Editors of *The Journal* of the OSMA, was among those presented awards by the Oklahoma State Heart Association at the organization's "Golden Key" luncheon held September 15th in Norman.

Cited for his outstanding work in professional education, Doctor Lynn is editor of the Heart Page which appears in *The Journal* each month, featuring new information about heart diseases.

Others recognized at the meeting and their fields of service were: James F. Hammarsten, M.D., St. Paul, Minnesota, formerly of Oklahoma City, who planned the first Consecutive Case Conference for Cardiovascular Disease presented in the nation; Howard Cowan, Tulsa, received the president's award as the immediate past-president; Jim Pritchett, Oklahoma City, for his work in public education; Mrs. Mary Grant, Idabel, for community service; Mrs. Frank Lake, Oklahoma City, for volunteer service; Gene Johnston, Oklahoma City, as special blood donor to open heart surgery patients; U. I. Smith, Fairview, for fund raising; and, the W. G. Specht family, Fairview, received the research award for their memorial gift. □

Counties Plan Polio Drives

Responding to a survey of the OSMA Council on Public Health, twenty-four county societies reported on mass Sabine immunization plans. All but one, Logan County, have programs underway or plan to in the near future. □

Letters

A Great Orthopedist

Doctor W. K. West passed to his rewards on August 6, 1962. His loss has been felt by all physicians of Oklahoma County and many physicians throughout the world who knew him or his outstanding work.

Born November 11, 1890 in Uvalde, Texas he moved with his parents to Oklahoma City in 1899. His father, an active physician, founded a school of medicine which became the University of Oklahoma School of Medicine and was its first dean. Dr. W. K. West graduated from this school in 1915 and from that time forth was active in the teaching and administration activities of the school. Dr. West was on the ground floor of the practice of orthopedics in this country. He participated during the first World War in the first orthopedic training school of this country set up primarily to train orthopedic surgeons for war time activities. The school was founded in Oklahoma City and gave empathy to a large number of surgeons who later became outstanding orthopedists. Following this, Dr. West further extended his orthopedic education, became a world wide traveler, visiting orthopedic clinics and physicians. He became intimately acquainted and remained in contact with the dominant founding men of orthopedics, particularly in this country, throughout his life.

From 1918 forward, his life was one of dedication to the practice of orthopedic surgery in Oklahoma City and to the parallel teaching activities that developed in the course of a very expanded orthopedic center in this area.

Dr. West was very active in the growth of the St. Anthony Hospital in Oklahoma City and, for as long as his wife can recall, was chairman of the Department of Orthopedics at that institution, set up the training program there and administered it ably throughout his life. In later years, he was similarly active in setting up the orthopedic program at the Baptist Memorial Hospital in Oklahoma City and his latest accomplishment here was virtually single handedly effecting that hospital's creditation for an intern training program. Dr. West was very active in the Crippled Children's Clinics of this state, traveling as each of the senior orthopedists did of that time to outlying areas to serve clinics. I recall his story of traveling in a Model T. Ford to McAlester and as far as Amarillo with regularity to supervise these clinics. He was quite active in setting up the Crippled Children's Hospital and particularly administering it. His orthopedic service at the University Hospitals Crippled Children's Division is the oldest continually supervised service, the attendance at which he was very rarely absent over a period approaching thirty years.

As part of his medical school interest, the Physiotherapy School was set up. It was guided and was largely funded by his persistent activities. This has become an outstanding school of physiotherapy. From its beginning he was very active in the function both administratively and clinically practicing with the activities of the National Foundation of Infantile Paralysis. The experience and leadership that he gained in this activity led to his active abilities for financing a multitude of medically related activities in the Medical School, in the Oklahoma Medical Research Foundation and with the United Fund affiliates in this community.

He was a lifetime active Methodist and a member of the official board of St. Luke's Church for many years in Oklahoma City. One of his more recent honors was when he became honorary life member of the Oklahoma City Chamber of Commerce. In recent years he became progressively more active in civic activities, particularly those medically related in one of the country's truly outstanding Chambers of Commerce.

Well in excess of 100 orthopedic residents from the University of Oklahoma School of Medicine program and thousands of former medical students will never forget Dr. West as a man who was preoccupied with patient care and simultaneously with imparting his orthopedic skills to students and residents alike. No adequate memorial from this group of men can be expressed and the reverence and respect of all physicians with whom he came in contact will continue.

Wm. N. Harsha, M.D.

A Man I Knew

Gregory E. Stanbro, M.D.; F.A.C.S.

We pay tribute to a man I knew, Gregory Stanbro, who went to sleep August 31, 1962. Someone has said that, "The extent of one man's life on another is most accurately measured by the breadth, depth, and height of their association; in good behaviour and bad; in prosperity as in lean years; in work as in play; in pleasure as in disappointments; in all contrasts that men experience as they live this precious life day by day, year in and year out."

Many of you knew Gregory Stanbro in one or more of these avenues, but it was my great fortune to have known him in a fuller way for twenty-six years—as a Kiwanian; as a professional associate; as a friend; as a family man; as a citizen; and as a religious worker. Some thought he was not easy to know. Perhaps his "damned Yankee" heritage, as he often referred to it, made him a little reticent in making quick friends. He seemed to look for sincerity in men but once he recognized this trait in a man he knew he had found a friend. Friendship with Gregory Stanbro was solid, never ostentatious, but warm and dependable.

Gregory Stanbro was a true Kiwanian, a builder in the broadest sense. He built for Kiwanis, having been president in 1939. He built boys and men through the Y.M.C.A., through O.U. Medical School, where in addition to his lectures in Surgery and his active surgery, he taught over a period of time the ethics of surgical practice, and his association

with men everywhere. His exemplary life was his greatest virtue.

Citizenship was paramount in Gregory Stanbro's life. He was Captain in the Medical Corps in World War I. He worked in many civic affairs, Chamber of Commerce, Symphony, Y.M.C.A. and many others.

The professional life of Gregory Stanbro was enviable. He had the two essentials of a true physician, namely the best training obtainable at home and abroad and his understanding and compassion for his fellow man. He was loved by those whom he served as but few physicians are loved. He was a leader in organized medicine, having been president of Oklahoma County Medical Society, secretary of the Oklahoma City Academy of Medicine and had been active in various capacities of the Oklahoma State Medical Association. He was always seeking and disseminating new information in the various aspects of health, but especially in cancer research on which National board he served with recognized dignity, ability and zeal. He was an avid reader and recognized as the most widely read physician in Oklahoma. His professional zeal did not curtail his extensive and diversified interest in most things that affect human behaviour. He loved opera, his interest in and appreciation for art was second to but few, and he was so human that his favorite television show was the homespun Western, "Wagon Train".

With all these interests and activities this man never was found lacking in his devotion to home and family. In his travels he took delight in selecting a new hat or a dress for his devoted wife, Gertrude, all of which she loved. His frequent letters to his children, Gregory and daughters, Pat and Anne, were always a first. Their letters in return gave him pleasures equalled by few events in his life.

It is obvious that Gregory Stanbro put first things first, hence his church to which he was most devoted was never taken for granted, nor were his duties in the church pushed aside. He was Senior Warden at St. Paul's Episcopal Church and gave of himself easily, willingly and freely. This religious influence was felt in the various groups with which he worked.

These are only a few of the attributes of the man I knew. I am deeply honored to have been his friend and to join in this tribute to Gregory Stanbro, a full measure of man.

R. Q. Goodwin, M.D.

DEATHS

GREGORY E. STANBRO, M.D.
1892-1962

An Oklahoma City physician for over 30 years, Gregory E. Stanbro, M.D., died August 31, 1962.

A native of Springville, New York, Doctor Stanbro graduated from the University of Buffalo School of Medicine in 1916. After practicing in Pawhuska for nine years, he came to Oklahoma City in 1931.

In addition to his private practice, Doctor Stanbro was Clinical Professor of Surgery at the University of Oklahoma School of Medicine. He was a Fellow of the American College of Surgeons.

JOSEPH T. MARTIN, M.D.
1882-1962

Joseph T. Martin, M.D., retired, 79-year-old, Oklahoma City physician, died October 2, 1962.

Born in 1882, Doctor Martin came to Oklahoma with his family during the run of 1889. He graduated from St. Louis University School of Medicine in 1907, later establishing his practice in Oklahoma City. In 1910, he joined the faculty of the Epworth Medical School which became the University of Oklahoma School of Medicine, a position which he held for 37 years.

In addition to his private practice and teaching position, Doctor Martin was well known in civic affairs. He was a member of the Oklahoma City Park and Recreation Board and had served as a city health officer.

After retiring from practice in 1945, he was named professor emeritus of medicine at the O.U. Medical School. Listed among his professional affiliations was his fellowship in the American College of Physicians. □

TOM L. WAINWRIGHT, M.D.
1909-1962

A 53-year old, Mangum physician, Tom L. Wainwright, M.D., died last month.

A 1933 graduate of the University of Oklahoma School of Medicine, Doctor Wainwright took two years internship in Evanston, Illinois and Oklahoma City, returning to the O.U. medical school to take a year residency.

During World War II, he served with the navy as a Lt. Commander for 42 months.

Active in professional circles, Doctor Wainwright served as a Delegate to the Oklahoma State Medical Association and held a Fellowship in the American College of Surgeons. □

ADMISSION BY
PHYSICIAN ONLY

A Distinctive Atmosphere
in A Setting of Elegance

Irene's
NURSING
HOME

THE HALLMARK OF
EXCELLENCE IN CHRONIC
and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City
CE 2-8091 CE 2-7853

Miscellaneous Advertisements

FOR RENT: beautiful, air-conditioned, ground floor office, 631 N.W. 10th, Oklahoma City. Off-street parking, complete equipment optional. Contact Mrs. Neil Woodward, 4301 North Lincoln, Oklahoma City. JA 5-7028.

NOW LEASING office space in medical and dental building. One and one-half blocks from Midwest City Memorial Hospital. Closest office space available to hospital. Contact Tom J. Murdoch, D.D.S., 312 South Midwest Blvd., Midwest City. Phone PErshing 2-3111 or PErshing 2-7105.

BOARD ELIGIBLE Orthopedic Surgeon desires Oklahoma practice opportunity (group or associate). Age 32, graduate of St. Louis University, presently training at Henry Ford Hospital, Detroit, Michigan. Contact John A. Lynch, M.D., 17505 Stoepel, Detroit 21, Michigan. Available May 15, 1963.

FOR SALE: General practice for one or two doctors in town of 2,800. Two man clinic grossing $70,000 per year, but could be much higher doing own surgery. Modern, air conditioned officers, x-ray, physical therapy. Eighteen bed community hospital with complete laboratory. One doctor is taking residency and other is taking position with Atomic Energy Commission. Will introduce over extended period. Contact W. A. Geiger, Jr., M.D., Fairfax, Oklahoma.

BOARD ELIGIBLE surgeon desires solo opportunity or group association; 32 years old; available July 1, 1963; contact Harvey B. Koch, M.D., 202 North Taylor Street, Apartment #1, Little Rock, Arkansas.

HOUSE STAFF PHYSICIAN Wanted: St. Francis Hospital, Tulsa, desires physician to work half-days 4 days per week, round-the-clock on 5th day. Salary $8-900 per month. Contact W. D. Hoover, M.D., Pan American Building, Tulsa.

WOULD LIKE to share expense on tape recorded medical subscriptions of surgery, internal medicine and general practice. Contact Key B, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

SURGEON, age 40, married, graduate of Geneva University, Geneva, Switzerland (1951), Board Certified, wishes to locate in Oklahoma, contact Mohamed S. Saydjari, M.D., 132 West Division, Barron, Wisconsin.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

FOR SALE: Pediatric practice in Ponca City, Oklahoma. Available immediately. Will introduce. Contact Tom D. Moore, M.D., 418 Community Building, Ponca City. Telephone ROgers 2-5611.

FOR SALE: Practically new examining table, treatment table, instrument cabinet, scales, stool and spot light. Contact T. B. Collum, M.D., 208 Lenox Drive, Grandview Heights, Muskogee, Oklahoma.

FOR SALE: 100x100 Profexray. Excellent condition with fluoroscopy tilt table, developer tank. Complete—$1,500. Contact Elton W. LeHew, M.D., or Phillips R. Fife, M.D., Guthrie, Oklahoma.

Mercy Hospital Heart and Research Institute

has cytologic and autoradiographic facilities for differentiation of gastric lesions. This diagnostic service is free of charge to patients with demonstrated gastric lesions.

★ ★

Call CE 2-9171, Ext. 250, for appointment.

★ ★

Mercy Hospital

501 N.W. Twelfth Street
Oklahoma City, Oklahoma

Each of us realizes the value of consistency in the discipline and guidance of children. We also like to feel there is a quality of consistency in our work and our efforts. Last month we digressed from our ABC's of Auxiliary projects to introduce the new International Health Committee. This month, with typical feminine "consistency," we submit the "S" for Safety in our ABC'S.

Through the years, perhaps few Auxiliary projects have attained the status of our Safety program. At times we are called upon, of course, to exert unusual effort for some committees. We are thinking particularly of the necessity of concentrating effort on Legislation, AMA-ERF, and Civil Defense, for example; because national conditions and timing affect these projects. Safety, by its very nature, is ever-present in our conscious and subconscious thought, in daily living itself. Accompanying this awareness is the shocking upward trend in accidents involving automobiles and the heartbreaking increase each year in traffic fatalities and injuries—drownings, poisonings, the list is endless.

To those of us who drive a great deal and to those of us who have children learning to drive, the resolutions passed last spring by the Ohio Medical Auxiliary deserve consideration and imitation by every state. Briefly, the resolutions cover: recommendations for driver's training courses for all licensures; physical examinations required at specific intervals on renewals; and required seat belts in every vehicle. The latter recommendation followed combined efforts of the Ohio Auxiliary with other women's groups. Perhaps Mrs. Glen L. Berkenbile, our new State Safety Chairman, and her committee may consider our state's following the fine example of Ohio.

Although Mrs. Berkenbile has already contacted County Presidents and Chairmen, each Auxiliary member and member-at-large should be familiar with the types of safety especially emphasized this year.

The GEMS, Good Emergency Mother Substitute, program consists of conducting a course in training for qualified baby-sitters. It was inaugurated several years ago and is increasing in value with each year. Phoenix, Arizona, last year trained over 500 people, ranging in age from twelve to seventy years of age, in a 15-hour course. The entire community expressed gratitude to the Auxiliary for this contribution. Maricopa County received wide press coverage.

SWAT, the Water Safety Program, was introduced only last year; and with the increasing American exodus to lakes and beaches each week-end, so has its importance increased. Members trained by Red Cross conduct classes for mothers and small children in water safety.

Traffic Safety we have already mentioned. This year we should sponsor a seat belt crusade and a "seat belt installation day," as a joint endeavor with the Junior Chamber of Commerce or other interested civic group.

Farm Safety includes emphasis on safety in rural areas and also includes home and pedestrian safety for senior citizens in urban areas as well.

Included in the General Safety Coverage can be any phase of safety, based primarily on the needs of your own community. This is the value of these wonderful programs. Clear with your own county medical societies and your local safety agencies. And be sure to contact our Safety Chairman, Mrs. Glen L. Berkenbile, Country Club Drive, Route 5, Muskogee. She will be glad to assist you in any way possible in establishing a workable and rewarding Safety program for your Auxiliary. Her committee's purpose is to help further our own "Aims for Excellence in Achievement."

Final reminder: Annual Fall Conference, State Medical Building, October 29th; Registration and Coffee, 9:00 a.m.; Meeting, 10:00 a.m.; Luncheon, 1:00 p.m. Let's be represented 100 per cent!

The Wall Street Journal points out the misleading statistical method used by government in preparing cost-of-living index. "Services," based upon the 1952 prices, comprise about one-third of the weight of the total index. Medical care is "weighted" at 14 per cent of the service category. No allowance has been made for improved standard of living and changing consumer buying habits: 6 million more people are seeking hospital care each year than in 1952; health insurance now protects more than 74 per cent of all families, compared to 59 per cent in 1952; daily per patient cost of hospital care is $19 today, but only $9.14 in 1952.

Inform your patients about drug safety? Free copies of a new leaflet, "Safety of Prescription Drugs," are now available in quantity from the American Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D.C. Excellent waiting room medicine for anxiety-ridden patients created by Thalidomide publicity.

Oklahoma M.D.'s attend national Blue Shield meeting. As guests of The Oklahoma Blue Shield Plan, Doctors J. Hovle Carlock, Peter E. Russo and Kenneth L. Wright represented the OSMA at the October 8th, 9th, and 10th National Conference of Blue Shield Plans, Miami Beach, Florida.

More than 2,000 California osteopaths are now M.D.'s Under the California Medical Association's unification plan, the Los Angeles College of Osteopathy was converted to the California College of Medicine, and most of the state's osteopaths were given refresher courses, tested and licensed as doctors of medicine. Only 195 osteopaths are still practicing as D.O.'s. State voters will decide on November 6th whether to abolish the State Board of Osteopathic Examiners and discontinue licensing osteopaths in California.

Annual report of the Oklahoma Insurance Commissioner reveals that the domestic commercial insurance companies of the state retained 56.1 per cent of their health and accident premium income in 1961, paying out only 43.9 per cent in benefits to policyholders. Domestic and out-of-state companies combined paid out 60.8 per cent and retained 39.2 per cent of income. Blue Cross returned 91 per cent to subscribers during the same period, while Blue Shield paid out 84.2 per cent.

Did you miss the 1962 annual meeting of the American Medical Association? Highlights of it have been put on film for showing at county society and hospital staff meetings. Prepared by Schering Corporation in cooperation with the AMA's Council on Scientific Assembly, the 30 minute black and white production features some of the more important scientific developments presented at the meeting. It's called Medifilm Report IV, and is now available from the AMA Film Library.

It's not too early for county societies to begin work on resolutions to submit to the OSMA House of Delegates next May 5th. Your resolutions form state medical association policy, and state-approved resolutions govern AMA policy. So, it's your responsibility . . . and worthy of your serious attention.

Foreboding changes in Blue Shield policies may be in prospect if Columbia University's School of Public Health and Administrative Medicine has its way. The school prepared a 312-page report for the New York health and insurance departments which was critical of Blue Shield and the medical profession. Stating the public does not know how to select qualified medical care and receives poor guidance from non-profit plans and the profession, the report calls upon Blue Cross-Blue Shield to begin screening "qualified" hospitals and physicians for various types of specialized care under the state's service contract.

MEETINGS

October 28	Conference of County Medical Society Officers, Skirvin Hotel, Oklahoma City
October 29-31	Oklahoma City Clinical Society Conference, Sheraton-Oklahoma Hotel, Oklahoma City
Nov. 25-28	AMA Clinical Meeting, Los Angeles, California

The JOURNAL of the Oklahoma State Medical Association

NOVEMBER 1962
Vol. 55/No. 11

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
DAVID C. MOCK, M.D.
J. W. MURPHREE, M.D.
E. K. NORFLEET, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

AMA-ERF 437
Chest Physicians on Cigarette Smoking 437
President's Page 438

scientific

Cardiovascular Dynamics of Tachycardia, *Jiro Nakano, M.D.* 439
Heart Page, *Jimmy L. Simon, M.D.* 452

medical center

Dean's Message 453
Review: The Nephrotic Syndrome in Childhood with Special Reference to Management, *Alexander W. Pierce, Jr., M.D.* 454
Keratinization: A Review, *Edward Smith, M.D. and Mark Allen Everett, M.D.* 459
Abstracts 463

news

Congress Concedes Tax Equity for Pension Plans of the Self-Employed 465
County Officers Conference Attracts Sixty Participants 467
Endowment Received 467
House of Delegates Meeting Called 468
Immunization Education Campaign Set for April . . . 468
Association Hosts Student AMA at Annual Banquet . . 468
Tulsa County Honors New and Senior Members . . . 469
Auto Safety Belts: Kit for Community Wide Campaign 470
AMA Scientific Program Outline 470
Letter 472
Miscellaneous Advertisements 472
Index to Advertisers lxii
Auxiliary lxiii
The Last Word lxiv

what your patients need to know about Aspirin

As you know, the confidence your patients place in a certain treatment or drug often helps to reinforce the relief they get from it. That's why it's often a good idea to explain the reasons for your recommendations, even in the simplest cases.

For example, aspirin. You probably recommend it more than any other drug, as an analgesic, as an antipyretic, as an aid to sleep when restlessness is caused by minor discomforts. Certainly aspirin is the most versatile and one of the most effective drugs in the arsenal of medicine.

But aspirin is such a common and such a safe drug that most laymen vastly underrate it. To use it with the utmost confidence, they need to know more about it. So next time, take a minute or two to explain what a uniquely valuable drug aspirin really is. You know it; your patients will be reassured to know it, too.

5-grain tablets

1¼-grain tablets

For professional samples, write The Bayer Company, 1450 Broadway, New York 18, N. Y.

AMA-ERF

A FAR REACHING new medical education loan guarantee program is now under way in American medicine. The goal of this program is to help eliminate the financial barrier to medicine for all who are qualified and accepted by approved training institutions. It is designed to provide a means of financing a substantial portion of the cost of a medical education.

The loan program for medical students, interns and residents is the result of a cooperative effort by American medicine and private enterprise.

The program is administered by the American Medical Association's Education and Research Foundation. The ERF has established a loan guarantee fund. On the basis of this fund, the bank will lend up to $1,500 each year to students. The ERF in effect acts as cosigner. For each $1 on deposit in the ERF's loan guarantee fund, the bank will lend $12.50.

More than 3,300 students, interns and residents have borrowed more than $6,000,000 through this fund since it was started last February. In Oklahoma 56 individuals in medical school have been loaned $59,200 and 13 in hospitals have been loaned $16,900. Physicians and others have contributed almost $700,000 to the loan guarantee fund which makes possible these loans.

The guarantee fund is almost depleted and more money is needed immediately to keep up the loan program. Eventually it will become self-sustaining as loans are repaid, but right now substantial financial help is needed. Your check will help to keep this important program viable. The OSMA Auxiliary is sponsoring a statewide campaign to bolster Oklahoma's participation in this worthwhile endeavor. To assure proper credit for Oklahoma, make your check payable to the AMA-ERF Auxiliary Fund, and mail it to Mrs. Virgil Ray Forester, 2336 Belleview, Oklahoma City. Contributions to the Foundation are tax deductible. □

Chest Physicians on Cigarette Smoking

THE COMMITTEE on Cancer of the American College of Chest Physicians has been studying the effect of cigarette smoking on the pulmonary and cardiovascular systems for a number of years. The Board of Regents of the College are convinced that sufficient evidence has accumulated to warrant an official statement with regard to cigarette smoking and health. Accordingly, a resolution connecting cigarette smoking with various pulmonary and cardiovascular conditions was approved by the Board and issued by the College.

The resolution stated that the weight of scientific evidence distinctly indicates that cigarette smoking and the inhalation of other atmospheric pollutants have a relationship which strongly suggests a connection with chronic bronchitis, pulmonary emphysema, cor pulmonale, cardiovascular diseases and cancer of the lung.

The College in its official statement urged its members and the medical profession in general to intensify their educational campaign directed toward the public, and youth in particular, relative to the hazards of smoking.

The College urges that efforts to control atmospheric pollution be encouraged and that support be given to endeavors in the field of research for additional information concerning other etiologic agents. □

The faculties of a Jules Verne or Nostradamus are not essential to fathom central governmental control, should the socialistic wishes of the past two years continue another ten years.

November 1972 could see: Bobby Kennedy being elected for a second term, establishing a family dynasty; our country being run by the triumvirate of Sorenson, Schlessinger and Rostow; all newspapers censored by Pierre Salinger; education financed, courses prescribed, books supplied from elementary through graduate and postgraduate school, as well as job placement, all government directed; medical services and hospital care, all government financed and controlled, dictated by the Public Health Service of the Department of Health, Education and Welfare; approximately 5,000 physicians having their licenses to practice medicine revoked this year and more than 3,000 in jail for violation of New Frontier Federal regulations; the police state advancing rapidly; and a great many other changes you can well imagine wherein we have lost more of our personal liberties.

Not a pretty picture! No, and if the human brain were not the only complicated piece of machinery that is run by unskilled labor, thriving on complacency, apathy and procrastination, then it could not happen here.

We are in reality a sleeping giant organization as regards power and influence in our nation; however, to avoid the diabolical conditions set forth above:

1st. We must awaken to our national plight.

2nd. We must recognize that needed services not rendered by the county and abnegated by the states, will soon be accepted and controlled by the Federal Government.

3rd. We must take a working position with our time and means in civic and community affairs.

4th. We must align ourselves with other local, state, and national organizations whose goals are similar to our own.

5th. We must praise our right minded representation and openly condemn those who would sell our heritage for a momentarily popular position.

6th. We must give the best medical service available to our people regardless of their ability to pay; and,

7th. We must help *select* and elect officials whose ideals support private enterprise and reject centralized governmental control.

Respectfully yours,

J. Hoyle Carlock, M.D.

J. Hoyle Carlock, M.D.

OSMA JOURNAL/scientific

Cardiovascular Dynamics of Tachycardia*

JIRO NAKANO, M.D.

In different types of tachycardia, the understanding of its pathologic physiology is sine qua non for clinical management of the patients with this condition. In this review, hemodynamic effects of tachycardia as well as subsequent cardiovascular regulatory mechanisms are discussed in detail.

IN DIFFERENT cardiovascular conditions various types of tachycardia occur which can be identified clinically or more accurately with the electrocardiogram. In addition to recognition of the existence and type of tachycardia, an understanding of the hemodynamic significance of the tachycardia is of the utmost importance in the fields of cardiovascular physiology and clinical medicine. The hemodynamic alterations as well as the clinical manifestations produced by different tachycardias vary widely, being dependent especially upon their duration, ventricular rate, foci of ectopic pacemakers and velocity of impulse conduction. Tachycardias such as an uncomplicated sinus tachycardia may not reveal any significant hemodynamic and clinical abnormalities except minor subjective symptoms.[1, 2] On the other hand, a tachycardia such as ventricular tachycardia[1-9] may result in a marked reduction in cardiac output and arterial blood pressure, and these changes may subsequently cause grave circulatory embarrassment. Since a tachycardia of a given severity is not simply a phenomenon limited to the heart alone, but causes complicated alterations of the circulation in general, all regulatory mechanisms of the heart and circulation must be taken into consideration in order to understand fully the patho-physiology of tachycardia. Hemodynamically, the onset of a paroxysmal tachycardia triggers the instantaneous breakdown of a normal steady state in a given individual. However, by means of circulatory feedback mechanisms, multiple compensatory factors interchangeably participate to preserve circulatory integrity and, within one's homeostatic capacity, to shift to a pathological steady state.

The purpose of this paper is to review the previous experimental and clinical studies on the hemodynamic effects of various tachycardias and to discuss their physiological significance.

GENERAL CONSIDERATIONS

1. Effects of Ventricular Rate on Hemodynamics.
   (a). Cardiac output and arterial blood pressure.

In the artificial circulation model,[10, 11] in which mechanical efficiency of the "heart"

*This work was partially supported by research grants from the U.S. Public Health Service (HE-07334 and H-3111).

(pump) is maintained constant over a wide range of pumping frequencies and minute outputs, it can be expected that, at a given pressure in the inflow tract, a stepwise increase of the "heart" rate would result in a stepwise increase in the minute output and in the systolic, diastolic and mean blood pressures. This observation from an elementary physical model, of course, can not be applied to cardiovascular dynamics seen in the living organism. In a beating heart in which the cardiac efficiency is not always kept constant under conditions of cardiovascular stress,[12-19] changes of heart rate beyond the physiological range affect the heart both directly and indirectly. Sooner or later such rapid rates result in decreases in cardiac output and mean arterial blood pressure, even though the homeostatic mechanisms always attempt to increase these latter parameters to or toward control levels.

It has been previously shown[10, 11, 20-25] that at normal heart rates ventricular filling takes place most effectively and rapidly during early diastole and is less effective during the remainder of diastole. As the heart rate increases and consequently diastole becomes relatively and absolutely shorter than systole,[24, 26-31] ventricular filling and thus stroke volume[20-22, 32-34] will be progressively impaired. It was observed that an increase in heart rate resulted in significant reductions in diastolic, systolic and stroke changes in ventricular diameter.[35-37] In order to maintain ventricular filling and stroke volume as large as possible, the period of diastasis, during which normally the atrial blood flows most slowly into the ventricles, is sacrificed first by shortening of its duration. In the presence of more extreme tachycardias, this period of diastasis disappears entirely so that ventricular filling due to atrial contraction takes place solely at the end of or during the phase of rapid inflow.[31] It has been demonstrated[38-49] that atrial contraction plays an important role in ventricular filling and consequently in stroke output, especially in the presence of mitral stenosis[38] and/or tachycardia.[50, 51] In atrial fibrillation and flutter in which atrial systole is absent or feeble, the ventricular filling and stroke volume are impaired more than in sinus tachycardia or in atrial tachycardia with an equivalent rate.[45, 50, 52]

It has been of primary importance in understanding the cardiovascular regulatory mechanisms to determine the effect of stepwise increases in heart rate *per se* on the arterial blood pressure and cardiac output. In spite of its frequent occurrence in clinical conditions, the effect of regular sinus tachycardia as well as bradycardia on these parameters has not, as yet, been clearly elucidated in intact animals or in man because of technical difficulties. There is agreement among investigators[10, 20-22, 33, 34, 53-55] that stroke volume decreases progressively as the heart rate increases, but the changes in cardiac output as well as in mean arterial blood pressure at heart rates below 200 beats per minute remain unsettled. Using his cardiometric method to calculate stroke volume, Henderson[20] observed that a stepwise acceleration of the heart rate up to 120 to 180 beats per minute resulted in a progressive increase in calculated minute output. Beyond a heart rate of 180 beats per minute, the decrement in stroke volume became greater, thereby lowering minute cardiac output progressively as the heart rate increased. Recently, Duff et al.[53] using anesthetized dogs, in which complete heart block was produced and heart rate changed by electrical stimulation, observed that minute cardiac work increased with heart rate reaching a maximum between 120 to 180 beats per minute and then decreased at higher rates. Employing similar methodology, Starzl et al.[34, 54, 55] found that a stepwise increase in heart rate from 30 to 190 beats per minute resulted in progressive increases in minute output and mean and diastolic pressures. Systolic pressure was almost unchanged, but stepwise decreases in stroke volume and central venous pressure occurred. Further increments in heart rate decreased cardiac output as well as mean arterial blood pressure. An increase in heart rate *per se* seems to be neither efficient nor a major determinant in augmenting cardiac output, because the increment in heart rate progressively shortens ventricular filling in each diastole. From these workers' observations, it can be said, however, that until the heart rate reaches rates of approximately 180, an acceleration of heart rate results in an increase in cardiac output since

within this range the increase in rate causes a smaller decrement in stroke volume relative to the increment in heart rate.

The effects of heart rates of more than 200 beats per minute, such as may occur in atrial and ventricular tachycardias, on mean arterial blood pressure and cardiac output are very conclusive and there is agreement among investigators.[4, 6-10, 20, 33, 34, 53-57] It has been found that electrically induced atrial and ventricular tachycardia results in progressive decreases in systolic, diastolic and mean arterial blood pressure as well as in cardiac output, whereas the atrial and central venous pressures become elevated progressively as the heart rate increases. Since stroke volume decreases during tachycardia, the arterial pulse pressure decreases and peripheral pulses become weaker or imperceptible. The fall in mean arterial blood pressure seems to be secondary to the decrease in cardiac output during tachycardia since the total peripheral resistance invariably increases.[4, 6-9, 58, 59] Decreases in stroke volume and cardiac output observed during tachycardia are related to reduction in ventricular filling from the onset of tachycardia but also are indirectly related to impairment of myocardial contractility resulting from tachycardia-induced hypoxia of the heart at a later period.[60-67] As the duration of tachycardia is prolonged, total oxygen supply to the myocardium via the coronary circulation becomes inadequate relative to its demand or utilization because of an increased cardiac work load.[68, 69] As seen in the other types of acute cardiac failure, the myocardial hypoxia results in a reduced production and storage of creatine phosphate and adenosine triphosphate in the myocardium, and eventually in a decrease in myocardial contractility.[60-67] When coronary flow was kept adequate using constant perfusion with oxygenated blood, there was no evidence that electrically induced tachycardia resulted in myocardial hypoxia, lactic acid accumulation, myocardial glycogen depletion, or an increased phosphorylase *a* activity in the heart.[60, 65] The details of the evolutional hemodynamic alterations caused by atrial and ventricular tachycardias are discussed below.

(b). Coronary blood flow.

It has been conceived *a priori* and also observed experimentally that more coronary blood flow occurs during diastole than during systole[6, 10, 69-81] because the rhythmic myocardial contraction during each systole compresses the coronary vessels thereby interfering with the blood flow. On the other hand, myocardial relaxation during each diastole decreases coronary peripheral resistance with a resulting increase in coronary blood flow. It has been stated, however, that under certain conditions the massaging action of the heart might enhance the mean coronary blood flow by emptying the coronary venous channels completely,[10, 26, 70, 82, 83] although this postulate has not been adequately confirmed as yet.

Since in tachycardia the duration of diastole becomes proportionally shortened,[10, 11, 20-22, 24, 27-31, 84] it would be expected that, within certain limits, an increase in heart rate *per se* would tend to decrease the coronary blood flow per stroke and per minute, and conversely a decrease in heart rate would tend to increase coronary blood flow per stroke and per minute. In the isolated heart and in the heart-lung preparation in which a coronary artery was perfused under constant pressure, Sassa[85] and Anrep and Haussler[73] demonstrated that an increase in heart rate decreased the coronary flow. However, they also found that in a marked tachycardia in which each ventricular contraction became too weak to restrict sufficiently coronary inflow during systole, the coronary blood flow remained unchanged or even increased. On the other hand, in experiments by Anrep and King[72] on the denervated heart-lung preparation, changes in heart rate within wide limits were found to have no effect on the coronary blood flow. Dif-

---

Jiro Nakano, M.D., Ph.D., whose specialty is cardiovascular pharmacology and physiology, graduated from the Kobe Medical College in Japan in 1949. He is now Assistant Professor of Pharmacology at the University of Oklahoma School of Medicine.

Doctor Nakano's professional affiliations include the New York Academy of Sciences, the American Federation of Clinical Research, the American Heart Association and the American Association for Advancement of Science and the Sigma Xi.

ferent results were later reported by Miller et al.[86] and by Hausner et al.[87] who observed that an increase in coronary flow resulted from an increase in heart rate in the isolated heart and the denervated heart-lung preparation. Wegria and Keating[3] reported that an increase in heart rate in the anesthetized dog temporarily decreased coronary flow which was followed by a rise above control level within wide ranges of heart rates. In anesthetized dogs, in which the heart rate was accelerated by electrical stimulation, Laurent et al.,[17] Duff et al.,[53] Starzl et al.,[34, 55] Wegria et al.[3, 4, 6] and Maxwell et al.[88] arrived at similar conclusions that an increase or decrease in heart rate always results in an increase or a decrease respectively in coronary blood flow per minute. Recently, using an electromagnetic flowmeter in intact animals, Gregg[80, 81] found that an increase in heart rate due to the tread mill exercise decreased stroke coronary flow but markedly increased minute coronary blood flow.

The multiple determinants regulating coronary blood flow have been extensively studied by many investigators.[18, 68-76, 80, 81, 89, 90] Obviously, the major determinants for regulation of coronary blood flow are, as derived from Poiseuille's law, the coronary arterial (aortic) blood pressure and the coronary peripheral (vascular and extravascular) resistance.[76, 77, 80, 81] During a marked increase in heart rate, such as occurs in atrial flutter, fibrillation and tachycardia, the coronary blood flow increases since the decrement of the coronary peripheral resistance is greater than the decrement of the mean arterial blood pressure. This decrease in the coronary peripheral resistance often occurs in spite of the increase in the total peripheral resistance.[91] The precise mechanisms of this regulation of coronary circulation are poorly understood and a great deal of work remains to be done on the problem. The following factors may well participate in the regulation of the coronary circulation during tachycardia of various types. Firstly, it was observed[9, 76, 80] that a marked tachycardia lowers the intraventricular systolic and diastolic pressures due to decreases in the ventricular volume and in the contractile force of the myocardium. This mechanical decrease in the extravascular support on the coronary vascular beds may well enhance the coronary blood flow in tachycardia. Secondly, an acceleration of heart rate *per se* results in a progressive augmentation of myocardial aerobic metabolism which is responsible for the increase in myocardial oxygen consumption.[15-18, 60, 68, 76, 80, 89-94] In an extreme tachycardia, a discrepancy between the increased oxygen utilization of the heart and the insufficient oxygen supply through the coronary blood flow[5, 60, 90, 95-98] results in myocardial hypoxia.[60, 65, 66] Consequently there is an accumulation of anaerobic metabolites and a decrease in pH, conditions which are known to cause a powerful coronary vasodilator action.[70, 71, 78, 90-101] Thirdly, the decreases in cardiac output, and mean arterial and pulse pressures resulting from tachycardia elicit cardiovascular reflexes[7, 102-112] through baroreceptors to cause sympathetic stimulation and catecholamine secretion both of which also contribute to the regulation of coronary blood flow.[76, 77, 113-116] Although it is theoretically and physically possible, it is very difficult to ascertain whether the massaging action of the heart[10, 26, 83, 117] contributes to the increase in the coronary flow in tachycardia, and, if so, to evaluate the magnitude of its action. In animals under various stresses such as hypovolemia, hypotension and the other circulatory disturbances, the above mentioned regulatory mechanisms in the cardiovascular system are already working and the coronary vascular beds are already dilated markedly or even maximally. Therefore, in these conditions it seems impossible to expect an additional increase in the coronary blood flow by an induction of tachycardia or an enhancement of cardiac work load[95-98] when the mean arterial blood pressure falls considerably. Likewise, under an experimental condition in which the coronary artery is exposed to the atmospheric pressure in order to measure the coronary blood flow, the mean arterial blood pressure is the sole determinant of cornary blood flow,[117-119] since the total peripheral resistance is obviously maintained constant. Hence, a decrease in the mean arterial blood pressure results invariably in a decrease in coronary blood flow.[117-119] The details of the effect of various tachycardias on the coronary circulation will be discussed later.

2. Effect of Focus of Tachycardia on Hemodynamics.

The normal conduction pathway[120-126] originating from the S-A node seems to be hemodynamically most efficient in producing contraction of the myocardium. As the focus of arrhythmia is situated lower along the normal conduction pathway, the myocardial contraction becomes more inefficient and feeble. Thus, the hemodynamic performance is progressively impaired. As demonstrated,[127] the atrial extrasystole has a smaller decrement of the systolic ventricular pressure than the ventricular extrasystole if atrial or ventricular extrasystole is induced at the equivalent time after the preceding beat. Similarly, the septal or apical ventricular extrasystole or idioventricular beats produce a smaller reduction of the ventricular pressure than the basal ones. This was proved to be correct in the prolonged arrhythmias such as the atrial and ventricular tachycardias.[6, 9, 11, 17] At the same heart rates, cardiac output and mean arterial pressure were reduced more in the presence of ventricular tachycardia than in the presence of atrial tachycardia, and likewise in ventricular tachycardia of basal origin than in those of septal or apical origin. From his experiments, Wiggers[128, 129] concluded that in the normal excitation and contraction of the ventricle impulses are rapidly transmitted to all parts of the ventricles and cause an efficient and synchronous summation of fractionate contractions, thereby producing the normal ventricular pressure pulse. In the cases of ventricular extrasystole and idioventricular rhythm, in which impulses arise from a ventricular focus, the excitation wave spreads in abnormal, sometimes opposite, directions as compared to the normal conduction pathways, and its speed is much slower. Hence, the phasic entry of the fractionate myocardial contractions,[10, 128, 129] which is responsible for the rapidly rising ventricular pressure pulse in a normal beat, is markedly delayed and asynchronous. Furthermore, in normal sinus rhythm, the chronological order of the ventricular contraction always follows the excitation sequence of the ventricles. Hence, the interventricular septum is excited and contracts first.[10, 127] The subsequent contraction of the ventricular walls over this rigidly contracted septum causes an efficient pumping effect with ejection of blood from the ventricles. With ventricular extrasystoles or idioventricular rhythms of lateral or basal foci, the direction of excitation as well as contraction is reversed and the heart performs the pumping work less effectively, because the ventricular walls contract before the interventricular septum is stiffened.

3. Effect of Duration of Tachycardia on Hemodynamics.

Even though tachycardia may be of the same type and the same rate in individuals with identical cardiac reserve prior to the onset, variation in the duration of tachycardia affects the cardiovascular hemodynamics and subsequently the individual's condition in varying degrees. For instance, if his cardiac reserve is adequate before its onset, a patient with supraventricular tachycardia of a few hours' duration may not reveal any subjective symptoms of a cardiovascular disorder, although mild changes in cardiac output, coronary blood flow and myocardial metabolism may be present. On the other hand, with a tachycardia of several days' duration, one would eventually encounter progressive deterioration of hemodynamic conditions and could easily succumb to ensuing congestive heart failure.[1, 2, 130-133]

Evolutional hemodynamic changes following induction of atrial fibrillation, atrial tachycardia or ventricular tachycardia have been extensively studied by Wegria and his collaborators.[3-9, 58, 59] Immediately after the onset of these tachycardias, the mean arterial blood pressure, cardiac output and coronary blood flow always decrease suddenly and markedly below control levels. The mean arterial blood pressure is lowered by the primary decrease in cardiac output resulting from impairment of ventricular filling due to rapid ventricular rate and absent or inefficient atrial contraction and from mitral and tricuspid incompetency induced by the tachycardia. This abrupt decrease in blood pressure and cardiac output leads to a decrease in coronary blood flow. It seems most likely that the associated increase in total peripheral resistance is due to vasoconstriction of the peripheral vessels resulting from stimulation of the sympathoadrenal system.[7, 36, 103-109] The latter response is elicited by a sudden fall in the mean ar-

terial blood pressure and a decrease in the pulse pressure immediately after induction of the tachycardias. Within one minute, these hemodynamic parameters returned to or toward control values except for coronary blood flow usually increasing above control. Some recovery observed during this period is probably due directly to cardiodynamic and indirectly to neurohumoral homeostatic mechanisms in the heart and circulation. Firstly, a primary reduction in ventricular filling during tachycardia causes a damming of the blood to raise the atrial and venous pressures. The increase in pressure gradient between the atrium and ventricle[9] enhances ventricular filling during the limited diastolic period, thus increasing cardiac output. Secondly, the fall in the arterial mean and pulse pressures during tachycardia result in stimulation of the sympathoadrenal systems through the baroreceptors[7, 36, 103-109] and in increases in myocardial contractility,[134-139] total peripheral resistance[6-9] (vasoconstriction in both arterioles and venules), venous return[140-144] and eventually in an increase in cardiac output. Cardiac and extracardiac catecholamine secretion[7, 103, 105] play one of the most important roles in the hemodynamic homeostasis during severe tachycardia. In the same period of tachycardia when the recovery of cardiac output was observed, a similar rise of mean arterial blood pressure toward control level is due mainly to the increase in cardiac output since, after the initial marked rise, the total peripheral resistance decreases toward control and stabilizes at a level above control. The decrease in the total peripheral resistance at this period is not only due to the cardiovascular feed back mechanisms by which the hemodynamic parameters are influencing each other to maintain the integrity of circulation, but also by the occurrence of the peripheral hypoxia induced by the decrease in the blood flow[9, 46] which causes a secondary vasodilatatory effect of some degree. On cessation of these tachycardias, there are sudden increases in all three hemodynamic parameters above control levels. At the peak of cardiac output and mean arterial blood pressure, the calculated total peripheral resistance is much lower than control value, indicating that the mean arterial blood pressure is elevated because of the primary increase in cardiac output. The concomitant increase in coronary blood flow can be accounted for by the increase in the mean arterial blood pressure and/or by the increase in the cardiac work load or cardiac effort,[68, 69, 90] and relative or presumably absolute decrease in the coronary peripheral resistance. If these arrhythmias persist for one week or longer, in addition to the instantaneous hemodynamic changes and immediate homeostatic mechanisms on the heart and circulation observed in tachycardias of a shorter duration, more profound effects on the circulatory hemodynamics as well as renal, hepatic, pulmonary and endocrine functions would occur as congestive heart failure ensues.[2, 130-133, 145-147] In those failing hearts, not only the alterations of cardiac structure (contractile proteins), ventricular function and myocardial metabolism but also the secondary disturbances in total and central blood volume and in electrolyte metabolism occur. These numerous factors influence each other through feed-back mechanism to produce very complex hemodynamic effects on the heart. No critical studies have been made as yet on the hemodynamic effects of chronic experimental tachycardia *per se* on the heart and circulation. Were such studies made, it would be difficult to interpret the data concerning these direct hemodynamic effects because of multiple cardiac and extracardiac factors involved in chronic experimental conditions as well as in patients.

VARIOUS TACHYCARDIAS

1. Atrial Fibrillation and Flutter.

The electrocardiographic manifestations of atrial fibrillation include the absence of P waves and/or the presence of irregular fibrillating waves, irregular ventricular complexes and usually a rapid ventricular rate. These electrical events are followed by such mechanical sequences as the abnormalities in atrial, ventricular, arterial and venous pressure pulses. As shown in the jugular phlebograms by MacKenzie[148] and Lewis,[149] atrial fibrillation reveals very feeble or the absence of atrial systolic waves in the atrial pressure curves,[29, 32, 42, 47, 57, 150, 151] since the inefficient disorganized fractionate contractions pre-

vent coordinated contractions of the atria from taking place.[52, 121] It has been consistently found[42, 52, 75, 151] that different magnitudes of mitral and tricuspid incompetency are always accompanied by atrial fibrillation. Incompetency seems to be related to irregular ventricular contractions[42] as well as an increase in atrial pressure,[52] and dilatation of valvular rings by ventricular dilatation when congestive heart failure is also present. Various sizes of regurgitation waves are often seen after c waves of the atrial pressure curves synchronous with ventricular systoles. The magnitude of mitral and tricuspid incompetency is influenced by end-diastolic ventricular volume and force of ventricular contraction.

Ventricular pressure curves[29, 42, 52, 150, 151, 153-155] also reveal waves of various magnitudes and very irregular rates, since the amount of ventricular volume in end-diastole and magnitude of mitral or tricuspid incompetency is variable from one beat to another in this arrhythmia. Therefore the height and duration of the ventricular pressure and the slope of isometric rise are mainly determined by the intervals between ventricular contractions. In the presence of a rapid irregular ventricular rate, ventricular filling is impaired and stroke volume is reduced. Many ventricular contractions fail to result in ejection of blood since they occur before adequate ventricular filling has taken place. The ventricular rate, under such circumstances, may be much greater than the peripheral pulse rate.[29, 42, 50, 52, 151,156] Since the aortic blood pressure is affected only by those ventricular systoles which elevate left intraventricular pressure above the aortic diastolic pressure, the contour and amplitude of the resulting arterial waves[42, 52, 154] depend not only on the strength of contraction, but on the diastolic pressure as well. It has been shown[42, 52] that the duration of the preceding cardiac cycle, and especially the period of diastole, is directly and linearly related to the magnitude of the aortic systolic and pulse pressures and is inversely related to the diastolic arterial pressure.

Thus atrial fibrillation is characterized by four major hemodynamic abnormalities, namely, ineffective or the absence of atrial contractions, irregular ventricular systoles, a rapid ventricular rate and usually mitral and tricuspid incompetency. These abnormalities always result in a reduction of stroke volume and cardiac output. It has been observed[46, 58,59, 154-157] that at the onset of atrial fibrillation with a rapid ventricular rate, there is an abrupt and marked fall in the cardiac output, mean arterial blood pressure and coronary blood flow, whereas the atrial pressure, venous pressure and the total peripheral resistance increase. A few seconds after onset of atrial fibrillation, both mean arterial blood pressure, and cardiac output gradually rise toward control values but remain significantly below them, whereas the coronary blood flow rises usually above its control level within one or two minutes. During this period the total peripheral resistance falls toward control but remains above it. Thereafter all the parameters are eventually stabilized to establish the hemodynamic steady state. The increase in coronary blood flow is due to a decrease in coronary peripheral resistance during atrial fibrillation. At the termination of atrial fibrillation, there is a sudden increase in all three hemodynamic parameters to levels greater than controls. After reaching a peak, all three parameters decrease toward control levels through the cardiovascular feedback mechanisms mentioned earlier. In most cases, within ten to fifteen seconds after cessation of this arrhythmia, both blood pressure and coronary blood flow reach a minimum which may be below their respective control levels. Then both rise again and reach a second maximum, after which they both return progressively to control values. The cardiac output, after reaching its peak, returns progressively to its control level. In most experiments arterial blood pressure and cardiac output return to control before the coronary blood flow. This persistent increase in the coronary flow must be due to a decrease in the vascular resistance of the coronary bed. Whatever the causes of the increased coronary blood flow in atrial fibrillation may be, its mechanism must be identical with that in other arrhythmias with rapid ventricular rate. It is interesting that Anrep and Hausler[73] found no increase in coronary blood flow in atrial fibrillation if ventricular rate remained unchanged. Clinically, several hemodynamic observations[2, 51, 80, 159-163] were made before

and after the spontaneous or therapeutic conversion of atrial fibrillation to normal sinus rhythm, although from physiological points of view, little pertinent information is provided by these studies. In patients with various heart diseases, it was noted that, when atrial fibrillation was converted to normal sinus rhythm, the cardiac output and mean arterial blood pressure increased significantly whereas the right atrial and peripheral venous pressures and the total peripheral resistance decreased.

Studies concerning the effects of atrial flutter on hemodynamics have been scanty and only a few observations are available at present. However, from the elaborate experimental work on atrial fibrillation[58, 59] as well as atrial tachycardia,[3-6, 8, 9] one would expect that the hemodynamic effects of atrial flutter with rapid ventricular rate are similar to those seen in atrial fibrillation and atrial tachycardia. Furthermore, it could be speculated that, in the absence of mitral and tricuspid stenoses, atrial flutter with normal ventricular rate may not result in any hemodynamic abnormality. Atrial contractions in atrial flutter are somewhat more intense than in atrial fibrillation and give rise to atrial systolic waves both in the atrial pressure curves and in the jugular phlebograms.[47, 148, 149, 165-167] However, it seems rather difficult to estimate the hemodynamic effectiveness and the magnitude of these contractions for ventricular filling. Nevertheless, the transmission of the atrial systolic wave can be seen in the ventricular pressure curves during diastole.[150, 168-170] The height of these waves obviously varies with the atrial blood volume, strength of atrial systole and the opening of A-V valves in atrial systole. Frequently, rapid oscillations synchronous with atrial flutter waves are seen in the pulmonary and brachial arterial pressure pulses. It has been postulated[150, 168-170] that these waves are most probably produced by a transmission of the impact of the left atrial systole directly upon the adjacent walls of the main pulmonary artery and aorta, or less likely, by the artifacts due to the movement of catheters by each heart action. It has been claimed[169] that tricuspid or mitral incompetency did not occur in atrial flutter, in contrast to its almost constant appearance in atrial fibrillation. However, in the presence of atrial flutter with varying A-V block, it is not surprising to see some degree of incompetency. Harvey et al.[168, 169] observed in patients with or without heart failure that during atrial flutter, the cardiac index is decreased significantly as compared with the average obtained from a group of normal individuals. In the majority of cases, the cardiac output increased upon the conversion of flutter to normal sinus rhythm. They found also that, unless concomitant heart failure is present, the patients with this arrhythmia do not reveal any evidence of pulmonary hypertension.

2. Atrial and Ventricular Tachycardias.

As mentioned earlier, an increase in ventricular rate results in shortening of ventricular diastole as well as systole. Usually the shortening of diastole is much greater than the shortening of systole.[10, 11, 20-24, 27, 28, 30, 31, 84] The reduction of the diastolic period interferes with ventricular filling and consequently with stroke volume in proportion to the increase in ventricular rate. In tachycardia, this limitation of ventricular filling results in decreases in both systolic and diastolic ventricular pressures. The subsequent reduction of stroke volume gives rise to decreases in systolic, diastolic, mean and pulse pressures as well as in cardiac output. Recently Burn et al.[56, 57] observed that electrical stimulation of the atrium at progressively increasing rates, up to approximately 300 per minute, reduced cardiac output progressively as shown by others.[3-6] However, at atrial rates over about 300 per minute, the induced atrial tachycardia resulted in a gradual increase in cardiac output since ventricular rate invariably slowed down owing to functional A-V block. The calculated total peripheral resistance increases markedly during tachycardia,[6-9] since the decrement of cardiac output is greater than that of mean arterial blood pressure. This increase in the total peripheral resistance is most likely caused by an increased sympathoadrenal stimulation mediated through the baroreceptors. Furthermore, in ventricular tachycardia in which A-V dissociation is almost always present without causing a disturbance in atrial rate,[2, 56] the above-mentioned cardiodynamic alterations are accompanied by mitral and tricuspid in-

competency.[6, 9] The magnitude of the regurgitation varies in accordance with the duration of the P-R intervals in slower ventricular tachycardia. On the other hand, in the presence of an increase in atrial pressure at an extremely rapid ventricular rate, incompetency is probably uniformly great and the regurgitation waves in the atrial pressure curves are constantly of higher amplitude.[9]

In anesthetized dogs Wegria et al.[3-6] studied the effect of electrically induced atrial and ventricular tachycardias of various rates on the mean arterial blood pressure, cardiac output and coronary blood flow. They observed that atrial tachycardia of a rate higher by about 20 beats per minute than control was found to produce a very temporary decrease in mean arterial blood pressure, cardiac output and coronary blood flow. Then all three parameters returned to control levels, although the coronary blood flow occasionally rose slightly above control level. If the atrial tachycardia was higher than the control rate by more than 20 beats per minute, the initial phenomena were the same but more marked, i.e., the initial temporary decreases in arterial blood pressure, cardiac output and coronary blood flow were generally more pronounced. Arterial blood pressure and cardiac output then rose to or toward control level but frequently remained below it, whereas the coronary flow rose to, and most often above, its control level. It was observed recently[9] that atrial and venous pressures always increased during atrial tachycardia. A stepwise increase in heart rate resulted in stepwise increases in the mean atrial and venous pressures. The increments in mean left atrial and pulmonary venous pressures were always greater than those in the mean right atrial and systemic venous pressures, since the distensibility and the capacity of the former are less than those of the latter.[171] Shortly after induction of the tachycardia the total peripheral resistance suddenly rose, and then gradually returned toward control level but usually remained above it.

The effects of ventricular tachycardia[3-6, 9] on mean arterial and venous pressures, atrial and ventricular pressures, cardiac output, total peripheral resistance and coronary blood flow were essentially similar to those of atrial tachycardia. However, the effects of ventricular tachycardia on those hemodynamic parameters were quantitatively similar to those of an atrial tachycardia of a higher rate. Mean arterial blood pressure and cardiac output fell more markedly, recovered less completely and more frequently remained below control level in ventricular than in atrial tachycardia of the same rate. The coronary blood flow, after the initial, temporary decrease, rose to and more frequently above control level, although it occasionally remained below control level. The increased coronary blood flow usually observed in both atrial and ventricular tachycardia, in which the mean arterial blood pressure was decreased, is presumably due to a decrease in the coronary peripheral resistance through the same mechanisms discussed in detail earlier. However, in severe ventricular tachycardia in which a marked reduction of the mean arterial blood pressure occurred, coronary blood flow may fall below control levels because the decrement in perfusion pressure is greater than that in the coronary resistance. Cessation of the tachycardia, either atrial or ventricular, results in sudden, marked increases in mean arterial blood pressure, cardiac output and coronary blood flow. These parameters then gradually return to control levels. The evolutional changes in cardiac output, mean arterial blood pressure, total peripheral resistance, and coronary blood flow observed immediately after induction and cessation of the tachycardia are identical with those seen in atrial fibrillation with an equivalent ventricular rate.[58, 59] These changes and the mechanisms responsible for them will not be recapitulated here.

3. Ventricular Fibrillation.

In a normally beating heart, in which the normal consequence of atrial and ventricular depolarization occurs, the myocardium contracts synchronously in a coordinated pattern.[10, 11, 25, 47, 121-123, 127-129, 172] The heart can thus increase the intraventricular pressure and discharge the blood into the aorta forcefully during the ejection period of systole. However, in ventricular fibrillation,[10, 11, 25, 173-181] numerous small segments of the ventricles contract independently in a disorganized and asynchronous fashion, thereby producing no temporal summation of contractile force to pump blood out of the heart. It has

been shown[174-182] that, from its initiation to cessation, ventricular fibrillation follows distinct electrocardiographic and macroscopic evolutions. Immediately following the induction of fibrillation, vigorous fibrillating movements are visible and the heart maintains moderate tonus for three to five minutes. At this time the electrocardiogram shows rapid, irregular, coarse oscillations representing bizarre QRS complexes. Then the ventricular fibrillation becomes finer with irregular contraction waves which are also reflected in the ECG. The atria may often continue their regular rhythm and usual rate. Finally, these fibrillatory movements gradually diminish over progressively greater areas until all visible contractions of the ventricles terminate approximately 30 minutes after its initiation. The details of electrophysiology of ventricular fibrillation will not be discussed here and the reader should refer to the excellent reviews of that aspect of this arrhythmia.[174-179] It can be assumed that these evolutional alterations of ventricular fibrillation may result in or may be the result of the subsequent changes of myocardial metabolism.[60, 65, 78, 174-185]

The heart fails to produce cardiac output, in any stage of ventricular fibrillation, so that at its onset the aortic and arterial pressure pulses disappear and the mean arterial blood pressure falls abruptly to very low levels.[182, 194, 195] Since there exists a pressure gradient between the arterial and the venous system on the cessation of the cardiac action, blood shifts continuously from the former to the latter and the venous pressure rises progressively until the arterial blood pressure is markedly lowered to the static blood pressure.[12, 195-198] This static pressure does not immediately reach an equilibrium because blood flow through the capillaries becomes very slow as the arterial blood pressure falls toward a very low level and the pressure gradient between the arterial and venous system becomes smaller. Usually 20 to 30 seconds after the onset of ventricular fibrillation, the venous pressures reach a maximum height and then fall very slightly, and within ten minutes stabilizes at levels significantly above controls.[195] This systemic venous pressure always attains a higher maximum level than the pulmonary venous pressure.[195] It seems likely that the magnitude of increments in the venous pressures and the atrial pressures after onset of ventricular fibrillation is mainly dependent upon the pre-existent circulating blood volume.[193] It was observed[180] that when ventricular fibrillation was stopped one-half minute after its induction and regular sinus rhythm resumed, the mean arterial blood pressure rose progressively and reached a maximum, which was much higher than control level. Approximately two minutes after cessation of ventricular fibrillation, the mean arterial blood pressure decreases progressively to or below control level.

In the whole animal or in man, in which the coronary arterial perfusion pressure is dependent on the aortic blood pressure, coronary blood flow falls abruptly and ceases completely within a few seconds as the aortic pressure falls markedly, even though the coronary peripheral resistance decreases considerably as the myocardial hypoxia increases. Since, in the normally beating heart, the myocardial tone and contraction and the intraventricular pressures are known to compress the coronary vascular bed and to restrict the coronary arterial blood flow,[6, 70, 71, 74, 76, 77, 80] a reduction or an abolition of these effects by ventricular fibrillation results in a marked decrease in the coronary peripheral resistance. Moreover, the cessation of coronary blood flow causes a progressive myocardial hypoxia and injury, and rapidly leads to the irreversible stage of myocardial necrosis.[182, 199] The myocardial hypoxia and injury together with accumulation of metabolites result in a marked coronary dilatation,[40, 70, 71, 74, 77, 99, 193] and also decrease the coronary peripheral vascular resistance. It is obvious that, in the isolated heart or in similar preparations in which the coronary arteries were severed from the influence of the aortic pressure, if the coronary blood pressure is maintained by the constant perfusion of the arterial blood, the induction of ventricular fibrillation always increases the coronary blood flow markedly because of a great decrement of the coronary peripheral resistance.[76-80, 190, 200-203] Under these experimental conditions, naturally, the higher the perfusion pressure is elevated, the greater the increase of the coronary

blood flow. As the coronary arteries are continuously perfused and the oxygen supply exceeds the myocardial demand in a given condition, the coronary blood flow subsequently decreases somewhat.[78] It was postulated[78] that this decrease is probably the result of increased tone of the coronary vascular bed secondary to the lower oxygen demand of the myocardium in ventricular fibrillation.[76, 78, 80, 181, 183,184, 137-190, 192] □

REFERENCES

1. Stewart, H. J.: Cardiac Arrhythmias in the Textbook of Medicine edited by R. L. Cecil and R. F. Loeb, Philadelphia, W. B. Saunders, 1959, p. 1294.
2. Friedberg, C. K.: The Cardiac Arrhythmias in Diseases of the Heart. 2nd edition, Philadelphia, W. B. Saunders Co., 1959, p. 321.
3. Wegria, R. and Keating, R. P.: Coronary flow in auricular and ventricular tachycardia. Am. Heart J., 37: 685, 1949.
4. Wegria, R., Frank, C. W., Wang, H. H., and Kanter, D. M.: Effect of auricular and ventricular tachycardias on cardiac output, coronary blood flow and arterial blood pressure. Fed. Proc., 12: 151, 1953.
5. Wegria, R., Wang, H. H., and Glaviano, V. V.. The mechanism of cardiac failure in tachycardia. J. Clin. Invest. (abstract), 34: 970, 1955.
6. Wegria, R., Frank, C. W., Wang, H. H. and Lammerant, J.: The effect of atrial and ventricular tachycardia on cardiac output, coronary blood flow and arterial blood pressure. Circulation Res., 6: 624, 1958.
7. Nakano, J., Zekert, H., Griege, C. W., Wang, K. M., Schafer, H. S., and Wegria, R.: Effect of ventricular tachycardia and arteriovenous fistula on catecholamines blood level. Am. J. Physiol., 200: 413, 1961.
8. Nakano, J., McGiff, J. C., Zekert, H., Jenney, C. B., Wellman, H. N., and Wegria, R.: A study of the mechanism of the increase in cardiac output induced by isopropylarterenol hydrochloride (Isuprel). Proc. Soc. Exper. Biol. and Med., 107: 172, 1961.
9. Nakano, J.: Unpublished observations.
10. Wiggers, C. J.: Physiology in Health and Disease, 5th edition, Philadelphia, Lea & Febriger, 1949.
11. Wiggers, C. J.: Circulatory Dynamics. New York, Grune and Stratton, Inc., 1952.
12. Starling, E. H.: The Arris and Gale Lectures on some points in the pathology of heart disease. Lancet, 1: 569, 1897.
13. Evans, C. L. and Matsuoka, Y.: The effect of various mechanical conditions on the gaseous metabolism and efficiency of the mammalian heart. J. Physiol., 49: 378, 1915.
14. Starling, E. H.: Linacre Lecture on the Law of the Heart, Cambridge, 1915, New York, Longman, Green and Co., 1918.
15. Eckenhoff, J. E., Hafkenschiel, J. H., Landmesser, C. M. and Harmel, M.: Cardiac oxygen metabolism and control of the coronary circulation. Am. J. Physiol., 149: 634, 1947.
16. Katz, L. N. (Editor): Symposium on the Regulation of the Performance of the Heart (9 papers). Physiol. Rev., 35: 91, 1955.
17. Laurent, D., Bolene-Williams, C., Williams, F. L., and Katz, L. N.: Effects of heart rate on coronary flow and cardiac oxygen consumption. Am. J. Physiol., 185: 355, 1956.
18. Braunwald, E., Sarnoff, S. J., Case, R. B., Stainsby, W. N. and Welch, Jr., Hemodynamic determinants of coronary flow. Effect of changes in aortic pressure and cardiac output on the relationship between myocardial oxygen consumption and coronary flow. Am. J. Physiol., 192: 157, 1958.
19. Nakano, J.: Energetics of the heart. II. Mechanical work, myocardial oxygen consumption and efficiency of the heart in the various work loads. Kobe J. Med. Sci., 4: 55, 1958.
20. Henderson. Y.: Volume curve of the ventricles of the mammalian heart and the significance of the curve in respect to the heart beat and the filling of the ventricles. Am. J. Physiol., 16: 325, 1906.
21. Henderson, Y. and Barringer, T. B.: The conditions determining the volume of the arterial blood stream. Am. J. Physiol., 31: 288, 1913.
22. Henderson, Y. and Barringer, T. B.: The relation of venous pressure to cardiac efficiency. Am. J. Physiol., 31: 352, 1913.
23. Wiggers, C. J.: Studies on the consecutive phases of the cardiac cycle. I. The duration of the consecutive phases of the cardiac cycle and the criteria for their precise determination. Am. J. Physiol., 56: 415, 1921.
24. Wiggers, C. J.: Studies on the consecutive phases of the cardiac cycle: The laws governing the relative durations of ventricular systole and diastole. Am. J. Physiol., 56: 439, 1921.
25. Wiggers, C. J.: Dynamics of ventricular contraction under abnormal conditions. Circulation, 5: 321, 1952.
26. Wiggers, C. J.: The innervation of the coronary vessels. Am. J. Physiol., 24: 391, 1909.
27. Lombard, W. P. and Cope, O. M.: Effect of posture on the length of the systole of the human heart. Am. J. Physiol., 49: 140, 1919.
28. Katz, L. N.: Factors modifying the duration of ventricular systole. J. Lab. and Clin. Med., 6: 291, 1921.
29. Katz, L. N. and Feil, H. S.: Clinical observations on the dynamics of ventricular systole: Auricular fibrillation. Arch. Int. Med., 32: 672, 1923.
30. Remington, J. W., Hamilton, W. F. and Ahlquist, R. P.: Interrelation between the length of systole, stroke volume and left ventricular work in the dog. Am. J. Physiol., 154: 6, 1948.
31. Braunwald, E., Sarnoff, S. J. and Stainsby, W. N.: Determinants of duration and mean rate of ventricular ejection. Circulation Res. 6: 319, 1958.
32. Wiggers, C. J.: Physiologic meaning of common clinical signs and symptoms in cardiovascular disease. J.A.M.A. 96: 603, 1931.
33. Wiggers, C. J. and Katz, L. N.: Contour of the ventricular volume curves under different conditions. Am. J. Physiol., 58. 439, 1922.
34. Starzl, T. E., Gaertner, R. A. and Baker, R. R.: Acute complete heart block in dogs. Circulation 12: 82, 1955.
35. Rushmer, R. F., Franklin, D. L., Moss, R. W. and Lobb, A. W.: Circulation, 16: 932, 1957.
36. Rushmer, R. F. and Smith, O. A., Jr.: Cardiac control. Physiol. Rev., 39: 1, 1959.
37. Rushmer, R. F.: Cardiovascular Dynamics. Philadelphia, Saunders Co., 1960.
38. Hirschfelder, A. D.: The volume curve of the ventricles in experimental mitral stenosis, and its relation to physical signs. Bull. Johns Hopkins Hosp., 19: 319, 1908.
39. Straub, H.: The diastolic filling of the mammalian heart. J. Physiol. 40 378, 1910.
40. Gessell, R. A.: Auricular systole and its relation to ventricular output. Am. J. Physiol., 29: 32, 1911-12.
41. Patterson, S. W., Piper, H. and Starling, E. H.: The regulation of the heart beat. J. Physiol., 48: 465, 1914.
42. Wiggers, C. J.: Studies on the pathological physiology of the heart. I. The intra-auricular, intraventricular and aortic pressure curves in auricular fibrillations. Arch. Int. Med., 15: 77, 1915.
43. Gesell, R. A.: The effects of change in auricular tone and amplitude of auricular systole on ventricular output. Am. J. Physiol., 38: 404, 1915.
44. Gesell, R.: Initial length-initial tension and tone of auricular muscle in relation to myo- and cardiodynamics. Am. J. Physiol., 39: 239, 1916.
45. Gesell, R. A.: Cardiodynamics in heart block as affected by auricular systole, auricular fibrillation and stimulation of the vagus nerve. Am. J. Physiol., 40: 267, 1916.
46. Stewart, H. J., Crawford, J. H. and Hastings, A. B.: The effect of tachycardia on the blood flow in dogs. J. Clin. Invest., 3: 435, 1926.
47. Wiggers, C. J.: Pressure Pulses in the Cardiovascular System, New York, Longmans, Green and Co., 1928.
48. Braunwald, E.. Frahm, C. J. and Ross, J., Jr.: Hemodynamic observations on the function of the left atrium in man. Circulation (abstract), 22: 728, 1960.
49. Braunwald, E., Frahm, C. J. and Ross, J., Jr.: Studies on Starling's law of the heart. V. Left ventricular function in man. J. Clin. Invest., 48: 1882, 1961.
50. Stewart, H. J. and Crawford, J. H.: The effect of tachycardia on the blood flow in dogs. II. The effect of rapid regular rhythm. J. Clin. Invest., 3: 449, 1926.
51. Smith, W. C., Walker, G. L. and Alt, H. L.: The cardiac output in heart disease. Arch. Int. Med.. 45: 706, 1930.
52. Burchbinder, W. C. and Sugarman, H.: Arterial blood pressure in cases of auricular fibrillation. Arch. Int. Med., 66: 625, 1940.
53. Duff, F., Berglund, E. and Borst, H.: The effect of heart rate on ventricular function and coronary circulation in dogs. Am. J. Physiol., 183: 611, 1955.
54. Starzl, T. E. and Gaertner, R. A.: Chronic heart block in dogs. A method for producing experimental failure. Circulation, 12: 259, 1955.
55. Starzl, T. E., Gaertner, R. A. and Webb, R. C.: The effect of repetitive electrical cardiac stimulation in dogs with normal hearts, complete heart block and experimental cardiac arrest. Circulation, 11: 952, 1955.
56. Burn, J. H., Vaughan Williams, E. M. and Walker, J. M.: The production of block and auricular fibrillation in the heart-lung preparation by inhibitors of cholinesterase. Brit. Heart J., 17: 431, 1955.
57. Burn, J. H., Vaugham Williams, E. M. and Walker, J. M.: The formation of acetylcholine in the heart; Its effect on the systemic output and its importance for auricular fibrillation caused by aconitine. J. Physiol., 131: 317, 1956.
58. Wegria, R., Frank, C. W., Misrahy, G. A., Sioussat, R. S., Sommer, L. S. and McCormack, G. H., Jr.: Effect of auricular fibrillation on cardiac output, coronary blood flow and mean arterial blood pressure. Am. J. Physiol., 163: 135, 1950.
59. Wegria, R., Keating, R. P., Ward, H. P., Dreyfuss, F., Frank, C. W. and Blumenthal, M. R.: Effect of auricular fibrillation on coronary blood flow. Am. J. Physiol., 160: 177, 1950.
60. Bing, R. J. and Kako, K.: Contractile proteins of heart muscle in man. Circulation, 24: 483, 1961.
61. Chang, I.: Effect of asphyxia on the adenosine triphosphate content of the rabbit's heart. Quart, J. Exper. Physiol., 28: 3, 1938.
62. Danforth, W. H., Naegle, S. and Bing, R. J.: Effect of ischemia and reoxygenation on glycolytic reactions and adenosine triphosphate in heart muscle. Circulation Res., 8: 965, 1960.
63. Furchgott, R. F. and Lee, K. S.: High energy phosphates and the force of contraction of cardiac muscle. Circulation, 24: 416, 1961.
64. Holland, N. C. and Klein, R. L.: The Chemistry of Heart Failure. Springfield, Ill., C. C. Thomas Publishers, 1960.
65. Klarwein, M., Kako, K., Chrysohou, A. and Bing, R. J.: Effect of atrial and ventricular fibrillation and ventricular

tachycardia on carbohydrate metabolism of the heart. Circulation Res., 9: 819, 1961.
66. Meerson, V. and Zayats, T. L.: Changes in the rate of protein synthesis in the myocardium during compensatory cardiac hyperfunction. Bull. Exper. Biol. and Med. (Soviet Russia), 7: 32, 1960.
67. Olson, R. E. and Piatneck, D. A.: Conservation of energy in cardiac muscle. Ann. New York Acad. Sci., 72: 466, 1959.
68. Sarnoff, S. J., Braunwald, E., Welch, G. H., Jr., Case, R. B., Stainsby, W. N. and Marcruz, R.: Hemodynamic determinants of oxygen consumption of the heart with special reference to the tension-time index. Am. J. Physiol., 192: 148, 1958.
69. Smith, F. M., Miller, G. H. and Graber, V. C.: The relative importance of the systolic and the diastolic blood pressure in maintaining the coronary circulation. Arch. Int. Med., 38: 109, 1926.
70. Anrep, G. V.: The regulation of the coronary circulation. Physiol. Rev., 6: 596, 1926.
71. Anrep, G. V. and Segall, H. N.: The regulation of the coronary circulation. Heart, 13: 239, 1926.
72. Anrep, G. V. and King, B.. The significance of the diastolic and systolic blood pressure for the maintenance of the coronary circulation. J. Physiol., 64: 341, 1927-28.
73. Anrep, G. V. and Hauesler, H.: The coronary circulation. II. The effect of changes of temperature and of heart rate. J. Physiol., 67: 299, 1929.
74. Anrep, G. V.: Studies in Cardiovascular Regulation. Lane Medical Lectures, Stanford University Publ., Univ. Series, M. Sc., 1936.
75. Gregg, D. E. and Green, H. D.: Registration and interpretation of normal phasic inflow into a left coronary artery by an improved differential manometric method. Am. J. Physiol., 130: 114, 1940.
76. Gregg, D. E.: Coronary Circulation in Health and Disease. Philadelphia, Lea & Febriger, 1950, p. 131.
77. Wegria, R. Pharmacology of the coronary circulation. Pharmacol. Rev., 3: 197, 1951.
78. Berglund, E., Monroe, G. R. and Schreiner, G. L.: Myocardial oxygen consumption and coronary blood flow during potassium-induced cardiac arrest and during ventricular fibrillation. Acta Physiol. Scandinav. 41: 261, 1957.
79. Sabiston, D. C. and Gregg, D. E.: Effect of cardiac constriction on coronary blood flow. Circulation, 15: 1, 1957.
80. Gregg, D. E.: Physiology of the coronary circulation. Ann. N.Y. Acad. Sci., 90: 145, 1960..
81. Gregg, D. E.: Regulation of Pressure and Flow in the Systemic and Pulmonary Circulation in The Physiological Basis of Medical Practice edited by C. H. Best. Baltimore, The Williams-Wilkins Co., 1961, p. 274.
82. Porter, W. T.: The influence of the heart-beat on the flow of blood through the walls of the heart. Am. J. Physiol., 1. 145, 1898.
83. Wiggers, C. J.: Myocardial factor in control of coronary flow. Fed. Proc., 12: 156, 1953.
84. Wiggers, C. J. and Katz, L. N.: The specific influence of the accelerator nerves on the duration of ventricular systole. Am. J. Physiol., 53: 49, 1920.
85. Sassa, K.: Untersuchungen ueber den Coronarkreislauf des Ueberlebenden Saeugertierherzens. Arch. f.d. ges. Physiol. 198: 543, 1923.
86. Miller, G. H., Smith, F. M. and Graber, V. C.: The influence of changes in the cardiac rate and irregular action of the heart on the coronary circulation. Am. Heart J., 2: 479, 1927.
87. Hausner, E., Essex, H. E., Herrick, J. F. and Baldes, E. J.: Control of coronary blood flow in the heart-lung preparation. Am. J. Physiol., 131: 43, 1940-41.
88. Maxwell, G. M., Castillo, C. A., White, D. H., Jr., Crumpton, C. W. and Rowe, G. G.: Induced tachycardia: Its effect upon the coronary hemodynamics, myocardial metabolism and cardiac efficiency of the intact dog. J. Clin. Invest., 37: 1413, 1958.
89. Case, R. B., Sarnoff, S. J., Braunwald, E., Stainsby. W. N. and Taylor. Z.: Hemodynamic determinants of coronary flow and myocardial oxygen consumption. Fed. Proc., 15: 32, 1956.
90. Nakano, J., McGiff, J. C. Rochester, D. F., Zekert, H., and Wegria, R.: Unpublished observations.
91. Read, R. C., Johnson, J. A., and Kuida, H.: Systemic and coronary pressure-flow relationship during total body perfusion in the dog. Am. J. Physiol., 190: 49, 1957.
92. Cohn, A. E. and Steele, J. M.: The influence of frequency of contraction of the isolated mammalian heart upon the consumption of oxygen. Am. J. Physiol., 113: 654, 1935.
93. Eckenhoff, J. E., Hafkenschiel, J. H., Landmesser, C. M. and Harmel, M.: The coronary circulation in the dog. Am. J. Physiol., 148: 582, 1947.
94. Van Citters, R. L., Ruth, W. E. and Reissmann, K. R.: Effects of heart rate on oxygen consumption of isolated dog heart performing no external work. Am. J. Physiol., 191: 443, 1957.
95. Wegria, R., Muelheims, G., Golub, J. R., Jreissaty, R. and Nakano, J.: Effect of aortic insufficiency on arterial blood pressure, coronary blood flow, cardiac output and oxygen consumption. J. Clin. Invest., 37: 471, 1958.
96. Wegria, R., Muelheims, G., Jreissaty, R. and Nakano, J.: Effects of acute mitral insufficiency of various degrees on mean arterial blood pressure, coronary blood flow, cardiac output and oxygen consumption. Circulation Res., 6: 301, 1958.
97. Wegria, R., Nakano, J., McGiff. J. C., Rochester, D. F., Blumenthal, M. R. and Muraviev, T.: Effect of arteriovenous fistula on mean arterial blood pressure, coronary blood flow, cardiac output, oxygen consumption, work and efficiency. Am. J. Physiol., 193: 147, 1958.
98. Nakano, J.: Hemodynamics of aortic insufficiency. To be published.
99. Hilton, R. and Eichholtz, F.: The influence of chemical factors on the coronary circulation. J. Physiol., 59: 413, 1924-25.
100. Green, H. D. and Wegria, R.: Effects of asphyxia, anoxia and myocardial ischemia on the coronary blood flow. Am. J. Physiol., 135: 271, 1942.
101. Langendorf, O.: Zur Kenntniss des Blutkreislaufs in den Kranzgefaessen des Herzens. Pflueger's Arch., 78: 423, 1899.
102. Ead, H. W., Green, J. H., and Neil, E.: Comparison of the effects of pulsatile and nonpulsatile blood flow through the carotid on the reflexiogenic activity of the sinus baroreceptors in the cat. J. Physiol., 118: 509, 1952.
103. Heymans, C.: Introduction to the regulation of blood pressure and heart rate. Springfield, Ill., C. C. Thomas Publisher, 1950.
104. Euler, U. S., von. Noradrenaline. Springfield, Ill., C. C. Thomas Publisher, 1956, p. 264.
105. Heymans, C. and Neil, E.: Reflexogenic Areas of the Cardiovascular System. Boston, Little, Brown and Co., 1958.
106. Sarnoff, S. J., Brockman, S. K., Gilmore, J. P., Mitchell, J. and Linden, R. J.: The influence of carotid sinus pressure on myocardial contractility. Fed. Proc., 18: 137, 1959.
107. Mitchell, J., Linden, R. J. and Sarnoff, S. J.: A technique for estimating changes in ventricular myocardial fiber length: Observations on the effect of stellate ganglion stimulation. Fed. Proc., 18: 105, 1959.
108. Sarnoff, S. J., Brockman, S. K., Gilmore, J. P., Linden, R. J. and Mitchell, J. H.: Regulation of ventricular contraction: Influence of cardiac sympathetic and vagal nerve stimulation on atrial and ventricular dynamics. Circulation Res., 8: 1108, 1960.
109. Sarnoff, S. J., Gilmore, J. P., Brockman, S. K., Mitchell, J. H. and Linden, R. J.: Regulation of ventricular contraction by the carotid sinus. Its effects on atrial and ventricular dynamics. Circulation Res., 8: 1123, 1960.
110. Mitchell, J. H., Linden, R. J. and Sarnoff, S. J.: Influence of cardiac sympathetic and vagal nerve stimulation on the relation between left ventricular diastolic pressure and myocardial segment length. Circulation Res.. 8: 1100, 1960.
111. Manger, W. M.: Chemical Quantitation of Epinephrine and Norepinephrine in Plasma. Springfield, Ill., C. C. Thomas Publisher, 1959, p. 158 and p. 162.
112. Gilmore, J. P., Mitchell, J. H. and Sarnoff. S. J.: The carotid-vago-atrial and carotid-sympatho-atrial reflexes. Fed. Proc., 19: 119, 1960.
113. Berne, R.: Effect of epinephrine and norepinephrine on coronary circulation. Circulation Res., 6: 644, 1958.
114. Feinberg, H. and Katz, L. N.: Effect of catecholamines, 1-epinephrine and 1-norepinephrine on coronary flow and oxygen metabolism of the myocardium. Am. J. Physiol., 193: 151, 1958.
115. Siegel, J. H., Gilmore, J. P. and Sarnoff, S. J.: Myocardial extraction and production of catecholamines. Circulation Res., 9: 1336, 1961.
116. McGiff, J. C., Nakano, J., Zekert, H. and Wegria R.: Effects of norepinephrine, epinephrine and phenylephrine on mean arterial blood pressure, cardiac output, coronary blood flow, total peripheral vascular resistance, cardiac oxygen consumption, work and efficiency. To be published.
117. Corday, E., Williams, J. H., De Vera, L. B. and Gold, H.: Hemodynamics of the coronary circulation during cardiac arrhythmias. Modern Concepts of Cardiovascular Disease, 27: 493, 1958.
118. De Vera, L. B., Corday, E. and Gold, H.: A method for simultaneous comparison of the antegrade and collateral coronary blood flow. Circulation Res., 6: 26, 1958.
119. Corday, E., Gold, H., De Vera, L. B., Williams, J. H. and coronary circulation. Ann. Int. Med., 50: 535, 1959.
120. Lewis, T. and Rothschild, M. A.: IV. The excitatory process in the dog's heart. Part II. The ventricles. Phil. Trans. Royal Soc. London, B., 206: 181, 1915.
121. Wiggers, C. J.: The present status of cardiodynamic studies on normal and pathological hearts. Arch. Int. Med., 27: 475, 1921.
122. Wiggers, C. J.: Modern Aspects of the Circulation in Health and Disease. Philadelphia, Lea & Febriger, 1923.
123. Wiggers, C. J.: The independence of electrical and mechanical reactions in the mammalian heart. Am. Heart J., 1: 173, 1925.
124. Sands-Rob, J. and Rob, R. C.: The excitatory process in the mammalian ventricle. Am. J. Physiol., 115: 43, 1936.
125. Wiggers, C. J.: The sequence of ventricular surface excitation determined by registration of monophasic action potentials. Am. J. Physiol., 118: 333, 1937.
126. Harris, A. S.: The spread of excitation in turtle, dog, cat and monkey ventricles. Am. J. Physiol., 134: 319, 1941.
127. Wiggers, C. J.: The muscular reactions of the mammalian ventricles to artificial surface stimuli. Am. J. Physiol., 73: 346, 1925.
128. Wiggers, C. J.: The interpretation of the intraventricular pressure curve on the basis of rapidly summated fractionate contractions. Am. J. Physiol., 80: 1, 1927.
129. Wiggers, C. J.: Are ventricular conduction changes of importance in the dynamics of ventricular contraction? Am. J. Physiol., 80: 12, 1927.
130. Lyons, J. A.: Excessive rapid heart rate. J.A.M.A., 108: 1393, 1937.
131. Cooke, W. T. and White, P. D. Prognosis in paroxysmal tachycardia and paroxysmal auricular fibrillation. Brit. Heart J., 4: 153, 1942.
132. Wolff, L.: The cardinal manifestations of paroxysmal tachycardia. N.E. J. Med., 232: 527, 1945.

133. Grant, R. P.: Congestive heart failure and death in a case of paroxysmal auricular tachycardia. Am. Heart J., 33: 121, 1947.
134. Cotten, M. deV.: Circulatory changes affecting gauge arches. Am. J. Physiol., 174: 365, 1953.
135. Randall, W. C. and Rohse, W. G.: The augmentor action of the sympathetic cardiac nerves. Circulation Res., 4: 470, 1956.
136. Rohse, W. G., Kaye, M. and Randall, W. C.: Prolonged pressor effects of selective stimulation of the stellate ganglion. Circulation Res., 5: 144, 1957.
137. Rushmer, R. F.: Autonomic balance in cardiac control. Am. J. Physiol., 192: 631, 1958.
138. Kelso, A. F. and Randall, W. C.: Ventricular changes associated with sympathetic augmentation of cardiovascular pressure pulses. Am. J. Physiol., 196: 731, 1959.
139. Linden, R. J. and Mitchell, J. H.: Relation between left ventricular diastolic pressure and myocardial segment length and observations on the contribution of atrial systole. Circulation Res., 8: 1092, 1960.
140. Shipley, R. E. and Gregg, D. E.: The cardiac response to stimulation of the stellate ganglion and cardiac nerves. Am. J. Physiol., 143: 396, 1945.
141. Peterson, L. H.: Certain aspects of reflex and mechanical influence upon venous circulation. Fed. Proc., 11: 122, 1952.
142. Rashkind, W. J., Lewis, D. H., Henderson, J. B., Heiman, D. F. and Dietrich, R. B.: Venous return as affected by cardiac output and total peripheral resistance. Am. J. Physiol., 175: 415, 1953.
143. Brecher, G.: Venous Return. New York, Grune and Stratton, Inc., 1955.
144. Bartelstone, H. J.: Role of the veins in venous return. Circulation Res., 8: 1059, 1960.
145. Barger, A. C.: The pathogenesis of sodium retention in congestive heart failure. Metabolism, 5: 480, 1956.
146. Gauer, O. H., Henry, J. P. and Sieker, O. H.: Cardiac receptors and fluid volume control. Prog. Cardiovascular Disease, 4: 1, 1961.
147. Davis, J. O.: A critical evaluation of the role of receptors in the control of aldosterone secretion and sodium excretion. Prog. Cardiovascular Disease, 4: 27, 1961.
148. MacKenzie, J.: The Studies of the Pulse, Arterial, Venous, Hepatic and of the Movements of the Heart. New York, Macmillan Co., 1902.
149. Lewis. T.: The Mechanism and Graphic Registration of the Heart Beat. Third ed. London, Shaw & Sons, 1925, p. 259.
150. Coblentz, B., Harvey, R. M., Ferrer, M. I., Cournand, A. and Richards, D. W.: The relationship between electrical and mechanical events in the cardiac cycle of man. Brit. Heart J., 11: 1, 1949.
151. Dodge, H. T., Kirkham, F. T., Jr. and King, C. V.: Ventricular dynamics in atrial fibrillation. Circulation, 15: 335, 1957.
152. Little, R. C.: Effect of atrial systole on ventricular pressure and closure of the AV valves. Am. J. Physiol., 166: 289, 1951.
153. Lewis, T.: Fibrillation of the auricles: Its effects upon the circulation. J. Exper. Med., 16: 395, 1912.
154. Einthoven, W. and Kortweg, A. G.: On the variability of the size of the pulse in cases of auricular fibrillation. Heart, 6: 107, 1915.
155. Braunwald, E., Frye, R. L., Aygen, M. M. and Gilbert, J. W., Jr.: Studies on Starling's law of the heart. III. Observations in patients with mitral stenosis and atrial fibrillation on the relationship between left ventricular end-diastolic segment length, filling pressure, and the characteristics of ventricular contraction. J. Clin. Invest., 39: 1874, 1961.
156. Stewart, H. J., Crawford, J. H. and Gilchrist, A. R.: Studies on the effect of cardiac irregularity on the circulation. I. The relation of pulse deficit to rate of blood flow in dogs subject to artificial auricular fibrillation and to regular tachycardia. J. Clin. Invest., 5: 317, 1928.
157. Stewart, H. J. and Gilchrist, A. R.: Studies on the effect of cardiac irregularity on the circulation. II. The estimation of cardiac output in dogs subject to artificial auricular fibrillation. J. Clin. Invest., 5: 335, 1928.
158. Kerkhof, A. C.: Minute volume determinations in mitral stenosis during auricular fibrillation and after restoration of normal rhythm. Am. Heart J., 11: 206, 1936.
159. Stewart, H. J., Deitrick, J. E., Crane, N. F. and Thompson, W. P.: Studies of the circulation in the presence of abnormal cardiac rhythms. Observations relating to rhythms associated with slow ventricular rate. J. Clin. Invest., 17: 449, 1938.
160. Meakins, J., Dautreband, L. and Fetter, W. J.: Influence of circulatory disturbances on gaseous exchange of blood: Blood gases and circulation rate in cases of mitral stenosis. Heart, 10: 153, 1923.
161. Landis, E. M. Brown, E., Fauteux, M. and Wise, C.: Central venous pressure in relation to cardiac "competence," blood volume and exercise. J. Clin. Invest., 25: 237, 1946.
162. Hecht, H. H., Osher, W. J. and Samuels, A. J.: Cardiovascular adjustments in subjects with organic heart disease before and after conversion of atrial fibrillation to normal sinus rhythm. J. Clin. Invest. (abstract), 30: 647, 1951.
163. Kory, R. C. and Meely, G. R.: Cardiac output in auricular fibrillation with observations on the effects of conversion to normal sinus rhythm. J. Clin. Invest. (abstract), 30: 653, 1951.
164. Hansen, W. R., McClendon, R. L. and Kinsman, J. M.: Auricular fibrillation. Hemodynamic studies before and after conversion with quinidine. Am. Heart J., 44: 499, 1952.
165. Ritchie, W. T.: Auricular flutter. Edin. Med. J., 9: 485, 1912.
166. Howarth, S.: Atrial waves on arterial pressure records in normal rhythm, heart block and auricular flutter. Brit. Heart J., 16: 171, 1954.
167. McCord, M. C. and Blount, S. G.: Auricular flutter: Hemodynamic and auscultory findings. Clin. Res. Proc., 3: 53, 1955.
168. Harvey, R. M., Cournand, A. and Ferrer, M. I.: Cardiocirculatory Performances in atrial flutter. J. Clin. Invest., 33: 940, 1954.
169. Harvey, R. N., Ferrer, M. I., Richards D. W. and Cournand, A.: Cardiocirculatory performance in atrial flutter. Circulation, 12: 507, 1955.
170. Donoso, E., Brunwald, E., Jick, S. and Grishman, A.: Congenital heart block. Am. J. Med., 20: 869, 1956.
171. Little, R. C.: Volume elastic properties of the right and left atrium. Am. J. Physiol., 158: 237, 1949.
172. Wiggers, C. J.: The electrocardiogram; Its relation to cardiodynamic events. Arch. Int. Med., 20: 93, 1917.
173. Wiggers, C. J.: Studies of ventricular fibrillation produced by electrical shock. III. The action of antagonistic salts. Am. J. Physiol., 93: 197, 1930.
174. Wiggers, C. J.: The mechanism and nature of ventricular fibrillation. Am. Heart J., 20: 399, 1940.
175. Wiggers, C. J. and Wegria, R.: Ventricular fibrillation due to single localized induction and condenser shock applied during the vulnerable phase of ventricular systole. Am. J. Physiol. 128: 500, 1940.
176. Wiggers, C. J., Wegria, R. and Pinera, B.: The effect of myocardial ischemia on the fibrillation threshold-mechanism of spontaneous fibrillation following coronary occlusion. Am. J. Physiol., 131: 309, 1940.
177. Wegria, R., Geyer, H. J. and Brown, B. S.: The fibrillation threshold after administration of digitalis and ouabain. J. Pharmacol. and Exper. Therap., 71: 336, 1941.
178. Wegria, R.: Ventricular fibrillation. Bull. Am. Assoc. of Nurse Anesthetists, 10: 14, 1942.
179. Wegria, R.: Ventricular Fibrillation in Medical Physics edited by O. Glasser. Chicago, Year Book Publishers, 1944.
180. Wegria, R., Frank, C. W., Wang, H. H., Misrahy, G., Miller, R. and Kornfeld, P.: A study of the usefulness and limitations of electrical countershock, cardiac massage, epinephrine and procaine in cardiac resuscitation from ventricular fibrillation.
181. Paul, M. H., Theilen, E. O., Gregg, D. E., Marsh, J. B. and Casten, G. G. Cardiac metabolism in experimental ventricular fibrillation. Circulation Res., 2: 573, 1954.
182. Senning, A.: Ventricular fibrillation during extracorporeal circulation. Acta Chir. Scandinav., 171: Suppl. 1952.
183. Barcroft, J. and Dixon, W. E.: Gaseous metabolism of the mammalian heart. Part I. J. Physiol., 35: 182, 1906.
184. Rohde, E.: Ueber den Einfluss der mechanischen Bedingungen. Arch. exper. Path. u. Pharmakol., 6: 401, 1912.
185. Hooker, D. R. and Kehar, D.: Carbohydrate metabolism of the heart during ventricular fibrillation. Am. J. Physiol., 105: 246, 1933.
186. Jardetzky, O., Greene, E. A. and Lorber, V.: Oxygen consumption of the completely isolated dog heart in fibrillation. Circulation Res., 4: 144, 1956.
187. Pedersen, A., Siegel, A. and Bing, R. J.: Cardiac metabolism in experimental ventricular fibrillation. Am. Heart J., 52: 695, 1956.
188. McKeever, W. P., Canney, C. P. and Gregg, D. E.: The oxygen consumption of the nonworking heart. J. Lab. & Clin. Med., 48: 923, 1956.
189. McKeever, W. P., Canney, P. C. and Gregg, D. E.: Oxygen uptake of nonworking ventricle. Fed. Proc., 16: 86, 1957.
190. McKeever, W. P., Gregg, D. E. and Canney, P. C.: Oxygen uptake of the nonworking left ventricle. Circulation Res., 6: 612, 1958.
191. Beuren, A., Sparks, C. H. and Bing, R. J. Metabolic studies on the arrested and fibrillating perfused heart. Am. J. Cardiol., 1: 103, 1958.
192. Michal, G., Beuren, A., Hogancamp, C. E. and Bing, R. J. Effect of interruption of coronary circulation on metabolism of the arrested heart. Am. J. Physiol., 195: 417, 1958.
193. Wiggers, C. J.: Failure of transfusions in irreversible hemorrhagic shock (study of central venous pressures). Am. J. Physiol., 144: 91, 1945.
194. Guyton, A. C. and Sattersfield, J.: Factors concerned in electrical defibrillation of the heart, particularly through the unopened chest. Am. J. Physiol., 167: 81, 1951.
195. Nakano, J.: Unpublished observations.
196. Starr, I. and Rawson, A. J.: Role of the "static blood pressure" in abnormal increments of venous pressure especially in heart failure. Am. J. Med. Sci., 199: 27, 1940.
197. Green, H. D.: Circulatory System, Physical Principles in Medical Physics edited by O. Glasser. Chicago, Year Book Publishers, 1950, p. 228.
198. Burch, G. E. and Ray, C. T.: A consideration of the mechanism of congestive heart failure. Am. Heart J., 41: 918, 1951.
199. Reynolds, S. R. M., Kirsch, M. and Bing, R. J.: Functional capillary beds in the beating, KCl-arrested and KCl-perfused myocardium of the dog. Circulation Res., 6: 600, 1958.
200. Fredericq, H.: Les influences qui modifient l'irrigation dans la paroi du coeur isole des mammiferes. Arch. Internat. Physiol., 6: 455, 1908.
201. Hammouda, M. and Kinosita, R.: The coronary circulation in the isolated heart. J. Physiol., 61: 615, 1926.
202. Lewis, F. B. and Gregg, D. E.: Effect of heart rate and intracoronary drugs of left circumflex coronary flow in the beating and stopped heart. Fed. Proc., 18: 91, 1959.
203. Lewis, F. B., Coffman, J. D. and Gregg, D. E.: Effect of heart rate and intracoronary isoproterenol levarterenol and epinephrine on coronary flow and resistance. Circulation Res., 9: 89, 1961.

800 N.E. 13th Street, Oklahoma City, Oklahoma

OSMA JOURNAL / heart page

Recognition of the Innocent Murmur in Childhood

JIMMY L. SIMON, M.D.*

WITH THE RECENT advances in the management of congenital malformations of the heart, accurate detection of organic murmurs is of the greatest importance. On the other hand, it is equally important to avoid making a "cardiac cripple" out of the healthy child with an innocent murmur.

A functional heart murmur of some intensity is heard in approximately half of normal children. A recently reported follow-up study of 139 children with functional murmurs revealed that only four per cent of these patients had evidence of heart disease 20 years later. In contrast follow-up studies of patients with rheumatic carditis by Bland and Jones indicated that the incidence of rheumatic heart disease at the end of 20 years was approximately 90 per cent. All the children with functional murmurs had detailed histories and physical examinations, electrocardiograms, chest films, and phonocardiograms, both at the beginning and end of the study. The incidence of heart disease in these patients would be no greater than that expected in the general population in this age group.

Three types of murmurs—the vibratory, the pulmonary ejection, and the venous hum—constitute 90 per cent of the innocent murmurs of childhood. The most common type is the vibratory murmur. This murmur usually has a musical quality, is of low frequency, and is usually maximally audible in the third and fourth left intercostal spaces, although it may be more prominent between the cardiac apex and the lower left sternal border. The murmur of mitral insufficiency is frequently confused with it. Vibratory murmurs are not well transmitted to the axilla. They are increased in intensity by fever and by exercise. Changes in position and respiration will bring about changes in the intensity of the murmur. Its etiology is unknown.

The venous hum is heard best in the neck and is often well transmitted to the second right intercostal space parasternally. It occasionally may be heard in the pulmonary area. It varies in intensity and is usually continuous. Jugular vein pressure will diminish or eliminate the murmur entirely. The hum is accentuated by conditions which produce an increase in the cardiac output (for example, fever, anemia, or exercise). It is heard best with the patient in the upright position.

The third frequently heard innocent murmur is the pulmonary ejection murmur. It usually has a blowing quality and occurs in early and mid-systole. It is heard maximally in the second and third left intercostal spaces at the left sternal border and is poorly transmitted, though it may be also heard in the infraclavicular area on the left. Special phonocardiographic studies have demonstrated that this murmur, which originates in the pulmonary artery is present in all normal individuals though it is heard with common auscultatory equipment in only a few persons. The thinner the child the more likely it is to be heard. This murmur also increases in intensity with any condition which increases the cardiac output.

In addition to the common innocent murmurs, it is important also to recognize the difference in quality of the heart sounds in children. It should be remembered that the pulmonic second sound is usually clear cut and somewhat louder than the similar sound of aortic origin. A split second sound is a frequent finding in children in the absence of heart disease. Aortic closure contributes to the second sound at the pulmonic area, but pulmonic closure does not con-

(Continued on Page 471)

*Department of Pediatrics, Children's Memorial Hospital, University of Oklahoma Medical Center.

OSMA JOURNAL/medical center

Dean's Message

Recognition and acknowledgment of the rapidly expanding research potential and capabilities of Medical Center faculty members are graphically demonstrated by the recent awarding of National Institutes of Health grants totaling over $5 million to establish four clinical research centers. The awards were made to the Department of Medicine for development of a Neurocardiology Research Center, to the Department of Pediatrics for a comprehensive, multicategorical and long-term study of child health and development, and to the Oklahoma Medical Research Foundation for research in cancer and a second for research in the abnormalities of lipid metabolism and transport in atherosclerosis. In each instance, the award covers a period of seven years.

Under terms of NIH clinical center grants, research may be directed either toward a broad range of medical problems or toward a specific disease or group of related diseases. The object is to provide the physical resources and the intellectual and scientific environment for integration and concentration of effort on clinical investigation. The centers must also provide training opportunities and may support appropriate teaching activities.

The Neurocardiology Center has as its main emphasis exploration of the relationship between the central nervous system and diseases of the cardiovascular system. The center has begun intensive biochemical, physiologic, sociologic and psychologic evaluation of a group of post-myocardial infarction patients who, along with controls, will be studied during the next seven years. Doctor Stewart Wolf and Doctor C. G. Gunn, directors, indicate that patients with a history of angina or myocardial infarction are needed in the study. A patient is not accepted without the approval of his personal physician and information is continuously provided to the referring physician. All hospital expenses are paid by the research center.

Establishment of the Pediatric Clinical Research Center under direction of Doctor Harris D. Riley and Doctor H. Neil Kirkham is awaiting some remodeling in Children's Memorial Hospital. Hospital care and supporting laboratories are provided by the grant, and suitable patients will be accepted upon referral from practicing physicians.

The cancer program, under Doctor Leonard P. Eliel, is aimed at investigation of metabolic effects of cancer and the interrelations of the endocrine system in patients. Effectiveness of the various chemotherapeutic agents is also being studied.

Clinical center activities in the OMRF Cardiovascular Section directed by Doctor Robert H. Furman will be concerned with the quantitative and qualitative control of serum lipoproteins and the effect of such controls on atherogenesis.

The significant feature in these awards is that each is patient-oriented, each supports a discrete patient-care unit within the hospital and each provides unique opportunities for the clinician-investigator.

Mark R Everett

Review: The Nephrotic Syndrome in Childhood with Special Reference to Management

ALEXANDER W. PIERCE, JR., M.D.*

THE LAST DECADE has produced advances in the diagnosis and therapy of the nephrotic syndrome which have significantly clarified pathological concepts and improved the immediate prognosis. Percutaneous renal biopsy[25] and electron microscopy[43] have materially contributed to our knowledge of renal pathology, radioisotope techniques have increased the scope of pathophysiologic knowledge, and corticosteroids represent an advance in therapeutic approach.

This article will be devoted primarily to a review of the management of the nephrotic syndrome. However, a brief summary of recent developments in pathology and pathogenesis of the disorder will be presented.

Definition: Clinically, the nephrotic syndrome is recognized as being characterized by proteinuria, hypoproteinemia, hyperlipemia, and edema. Nevertheless, edema is not a pre-requisite for the diagnosis, and hematuria not infrequently accompanies the clinical picture.[24] Azotemia and hypertension are generally found when the syndrome is associated with extensive glomerular histopathology, such as fibrosis, synechiae, or hyalinization.

The syndrome may be idiopathic, or it may be secondary to a wide variety of chronic nephropathies. The idiopathic nephrotic syndrome, sometimes termed lipoid nephrosis, is diagnosed with maximum frequency between ages two and five years. It is slightly more common in males than females.[2] It is seen with equal frequency in all races. Occasional familial and infantile cases are seen in which therapy is less efficacious and prognosis more guarded.[50, 57]

Etiology: In childhood, the nephrotic syndrome is usually idiopathic. Rarely, it may be seen in the course of such chronic nephropathies as diabetic glomerulosclerosis,[28, 52] lupus erythematosis nephritis,[39] renal vein thrombosis,[44] or familial nephropathy with deafness.[52] It has been reported in the course of syphilis,[22] malaria,[27] and primary amyloidosis.[33] It is frequently a transient feature of acute glomerulonephritis.[54]

Chemical and therapeutic agents have been implicated in isolated cases. The 2-4 dione drugs,[3] penicillamine,[13] gold salts,[22] mercurials,[55] bee stings,[48] and poison oak[47] have all been reported to be associated with the nephrotic syndrome in isolated instances. An aminonucleoside derived from puromycin has been widely used to produce nephrosis in experimental animals.

While it is recognized that clinical exacerbations are frequently associated with infection, either bacterial or viral, and that the syndrome may occur transiently in the course of post-streptococcal glomerulonephritis,[54] no specific infectious agent has been implicated etiologically in the nephrotic syndrome; and current concepts of the idiopathic nephrotic syndrome are principally immunochemical.

*From the Department of Pediatrics and the Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

While the possibility of undetected noxious agents acting as either toxins or initiators of an immunologic response cannot be excluded, most investigators feel the idiopathic nephrotic syndrome is autoimmune in origin and directly related to antigen-antibody reaction.[22, 32] Worthen[56] reports these children frequently have an allergic background. Diminished levels of serum complement[30] and the demonstration of gamma globulin fixation in the glomerular basement membrane[37] are felt to support this concept. In addition, the nephrotic syndrome has been produced experimentally in rats with anti-rat kidney sera from rabbits. Corticosteroid therapy and rubeola can be interpreted as producing remission through induction of relative anergy.

Pathology and Pathogenesis: Earlier concepts of this syndrome led to confusion with many descriptive terms utilized to delineate the syndrome either clinically or pathologically.[1, 9, 10, 34] Vernier's electron microscopy studies of renal biopsies[51] have supported Allen's concept[1] of membranous glomerulonephritis as the pathological lesion in the nephrotic syndrome.

With light microscopy acidophilic thickening of the glomerular capillary wall is seen with hematoxylin and eosin stain.[1] With periodic acid-Schiff stain this is sometimes more apparent and is felt to represent thickening of the basement membrane. Under the electron microscope the capillary epithelial cell of the normal glomerulus is found to have cytoplasmic branches which subdivide into foot-processes, the bases of which are closely applied to the basement membrane. In membranous glomerulonephritis, or the nephrotic syndrome, these epithelial cell foot-processes are greatly diminished in number, in large part replaced by broad masses of cytoplasm along the cell border. It is felt that this "smearing" of the foot-process accounts for what is interpreted with light microscopy as thickening of the basement membrane. Vernier *et al.*[52] believe the foot-process aberration seen with electron microscopy may be present when no abnormality is demonstrable by light microscopy. Increased vacuolization of both epithelial and endothelial cells is also noted with electron microscopy but the foot-process changes are felt to be the earliest pathological change and to be a consistent finding in the nephrotic syndrome, whether familial,[12] infantile,[57] secondary, or idiopathic.[52]

It is recognized that other lesions may exist concurrently with foot-process aberrations in specific instances. Cystic dilitations of the distal tubule may be demonstrated by microdissection of the nephron in the infantile nephrotic syndrome.[14] Synechiae, crescent formation, lobulation, endothelial proliferation, fibrosis, or hyalinization may be found with light microscopy of the glomerulus of chronic glomerulonephritis; and electron microscopy may show proliferation, vacuolization, and cytoplasmic swelling of endothelial cells with irregularity and thickening of the basement membrane (lamina densa).

The relationship of proteinuria to this pathological common denominator is not known. Specifically, it is not known whether there is a cause and effect relationship, or if there is, which is the precipitating factor.[29] Nevertheless, massive proteinuria, principally of albumin and gamma globulin, ensues and, together with increased catabolism,[16] leads to hypoproteinemia. It may be of significance that the proteins lost in greatest quantity are those of lower molecular weight, the alpha-2 and beta globulins being increased in serum concentration. Hypoproteinemia is associated with diminished serum osmotic pressure and hypovolemia. Increased aldosterone[7] and antidiuretic hormone levels then contribute to sodium and water retention, and the clinical picture is completed with anasarca.

The mechanism of hyperlipemia is not understood. Gitlin's[17] hypothesis, suggesting increased synthesis of low density lipid rich beta lipoproteins with diminished conversion to high density beta lipoprotein as stimulated by hypoalbuminemia, is appealing; but it conflicts with the finding of hyperlipemia preceding hypoproteinemia in experimental animals.[21] In any event, serum concentrations of phospholipids, neutral fats, and fatty acids are elevated,[42] and renal tubular deposition of fat droplets ensues. In addition, doubly refractile fat bodies can be demonstrated in the urinary sediment.

Treatment: There remain many areas of incomplete knowledge of the pathophysiology in this sequence of events, however; and con-

sequently therapeutic measures are still judged principally by clinical response. Prior to the advent of corticosteroids, however, all therapeutic measures utilized offered the further disadvantage of being directed toward symptomatic improvement. Steroids are the only agents which have been demonstrated to alter the pathologic lesion[15, 52] and consequently represent a marked advance in therapeutic approach.

The participants in the Annual Conference on the Nephrotic Syndrome recognized, in 1958, certain principles of corticosteroid therapy as being generally acceptable.[46] Corticosteroids should be given in large doses early, the prognosis being unfavorably influenced by long delay. The preparation to be utilized is totally a matter of individual preference. The initial treatment should be continued for relatively long periods and not just until diuresis is achieved; and with the institution of therapy there should be a long-range plan for either retreatment with exacerbation or prolonged maintenance therapy. Once the diagnosis of the nephrotic syndrome has been established, proteinuria, not edema, governs retreatment.

Symptomatic measures utilized previously are still of value at present as adjuvants, particularly in refractory cases. Plasma volume expanders such as polyvinylpyrrolidone, dextran,[26] and salt poor albumin,[41] and diuretic agents such as chlorthiazide[49] are useful for controlling edema in refractory patients or in patients in whom corticosteroids are not feasible. Induced infections such as rubeola and malaria, thyroid extract, diets, strict bed rest, and the many other measures previously utilized are rarely employed at the present time, although sodium restriction and potassium supplementation are required with corticosteroid or benzothiadiazine therapy. Mechlorethamine, or nitrogen mustard, suggested by West[53] as a measure to reduce antibody response, has occasionally been efficacious in refractory cases; but it has gained only scattered acceptance due to toxicity, difficulty of administration, and inconsistency of response.

The therapeutic regime of Riley[45] is representative of currently employed corticosteroid therapy. Prednisone is initiated with establishment of the diagnosis, 40 mgm. per day for children under 30 pounds, and 60 mgm. per day for those over 30 pounds. This is given seven days a week until proteinuria has been asbent for two weeks or five to six weeks have elapsed, whichever occurs earlier. The dosage is then tapered rapidly over a four to five day period. After a four day rest, therapy is reinstituted as maintenance, using 40 to 60 mgms., depending upon the weight, on three consecutive days of each week. This should be continued until the patient has been in clinical and biochemical remission for one year. Should proteinuria recur during the period of maintenance treatment, continuous therapy is reinstituted for a period similar to the initial course.

In some instances a failure to achieve diuresis on intensive therapy is followed by success on intermittent therapy; other patients respond to increased dosages of corticosteroid. Uusually, the initial dose of prednisone is increased by 20 mgm. per day. As an alternative, or in the event of failure with this regime, corticosteroids can be combined with a plasma volume expander. Salt poor albumin is given in 25 to 75 gm. doses intravenously for three to five days. Dextran as a 12 per cent solution may be given in a dosage of 300 to 400 ml. per square meter of surface area at a rate of 2 to 4 ml. per minute on alternative days for three to five infusions.[26] Polyvinylpyrrolidone may be administered in a 3.5 per cent solution in a dose of 500 ml. over a four to six hour period.[20] Extreme anasarca contraindicates the use of these agents, as pulmonary edema may be precipitated by the rapid increase in blood volume.

During continuous corticosteroid therapy the diet should be supplemented with 2 to 4 gms. of potassium chloride per day and no additional dietary salt should be added. Moderate salt restriction is continued during maintenance but potassium supplementation is not necessary.

The complications of corticosteroid therapy have recently been exhaustively reviewed by Good[19] and reviewed with specific reference to the nephrotic syndrome by Calcagno and Rubin.[6] Salt retention can be severe enough to lead to pulmonary edema, and hypokalemia can result in shock or severe muscle weakness. Psychoses, neuroses, focal

or generalized seizures, hypertension, and thromboembolic phenomena have all been reported. Osteoporosis and growth retardation still represent significant problems, although they have been circumvented to some extent with intermittent therapy. Hypoadrenocorticism represents a very real danger when the patient is subjected to stress.

Mortalities and treatment failures are still occasionally attributable to infection. Any focus of infection, regardless how minor, must be vigorously treated. In our clinic we prefer to use antibacterial prophylaxis when the patient is out of the hospital; but when the patient is hospitalized we withhold prophylaxis, initiating appropriate antibiotics in full therapeutic doses if infection develops. Pathogens likely to be encountered at home, such as the streptococcus and pneumococcus, are effectively prevented by sulfonamides or penicillin; but such hospital pathogens as the staphylococcus or gram-negative bacillus are not effectively inhibited by these agents. Social isolation is recommended when feasible for the first year and a tuberculin should be applied prior to initiating adrenocorticosteroid therapy. A positive tuberculin is justification for isoniazid coverage. Varicella and herpes zoster can be life-threatening to the patient on corticosteroids, and dosage should be reduced to physiologic amounts prior to the viremia when possible. Smallpox vaccination is specifically contraindicated; and since exacerbations have been related to diphtheria-pertussis-tetanus antigen and poliomyelitis vaccine,[29] it is recommended that all immunizations be withheld if practical until a two year remission has been achieved.

While multiple diuretic agents have been employed in the past, the benozthiadiazine chlorthiazide is most useful at the present time. The benzothiadiazines have slight carbonic anhydrase inhibiting effect, but act principally by inhibiting tubular reabsorption, producing saluresis, chloruresis, and kaluresis.[4] This is similar to the organomercurials in producing sodium excretion, but greater potassium excretion requires dietary supplementation. Chlorthiazide has been of great value in patients with hypertension or azotemia in whom corticosteroids are contraindicated. While hypertension and edema are controlled, this is symptomatic therapy; and the basic pathological process is not altered. Chlorthiazide is administered in a dosage of 30 to 50 mgm. per kg. per day.

Prognosis: Prognosis remains enigmatic. Hematuria is of little import,[2, 24] and mild azotemia and hypertension do not preclude a favorable outcome. The latter factors, however, do require extreme caution in the administration of corticosteroids, as either may rapidly increase in severity with initiation of therapy.

Clearance studies may be normal, elevated or depressed[5, 11] and generally are not helpful until chronic glomerulonephritis is clinically quite evident. McCrory[36] found the ratio of albumin to creatinine clearance to be helpful and Heymann[23] found the extent of globulinuria to be of prognostic import in four patients. Renal biopsy is principally of value as an aid in assessing the merit of corticosteroid therapy in a patient with mild hypertension or azotemia. Response to corticosteroid therapy is probably the most reliable indication of prognosis.[36] In general, a rapid clinical and biochemical response is associated with a favorable outcome and is found to persist with repeated courses for exacerbations.

Adrenocorticosteroids have been found to produce diuresis in 80 per cent of patients and histologic improvement in 90 per cent of cases.[15] Riley's collective study from sixteen centers[45] compared the results in the presteroid antibiotic era with patients treated since corticosteroids have been generally available and found the five year survival to be increased from 60 per cent to 75 per cent. Nevertheless, the diversity of therapeutic regimes employed, the lack of simultaneous controls, and the variability of the course without treatment, preclude precise assessment of the value of current therapy. At present it is accepted that adrenocorticosteroids favorably influence the clinical course and reduce hospitalization and incapacity; but sufficient time has not elapsed to categorically state that the actual survival is altered.

Summary: Current concepts of the nephrotic syndrome in childhood are reviewed with respect to etiology, pathology and pathogenesis. The various therapeutic programs used in this disorder are reviewed and a plan of total management outlined. □

REFERENCES

1. Allen, Arthur C.: The clinicopathologic meaning of the nephrotic syndrome. Am. J. Med. 18: 277, 1955.
2. Barness, L. A., Moll, G. H. and Janeway, C. A.: Nephrotic Syndrome. I. Natural history of disease. Ped. 5: 486, 1950.
3. Barnett, Henry L., Simons, Donald J., and Wells, Rae E., Jr.: Nephrotic syndrome occurring during tridione therapy. Am. J. Med .4: 760, 1948.
4. Beyer, Karl H.: The mechanism of action of chlorthiazide. Ann. N. Y. Acad. Sci. 71: 363, 1958.
5. Bruck, E., Rapoport, M., and Rubin, M. I.. Renal functions in the course of the nephrotic syndrome in children. J. Clin. Invest. 33: 699, 1954.
6. Calcagno, Philip L., and Rubin, Mitchell I.: Physiologic considerations concerning corticosteroid therapy and complications in the nephrotic syndrome. J. of Ped. 58: 686, 1961.
7. Deming, Quintin and Luetscher, John A., Jr.: Bioassay of desoxycorticosterone-like material in urine. Proc. Soc. Exp. Biol. & Med. 73: 171, 1950.
8. Derow, Harry A.: The Nephrotic Syndrome. N. Eng. J. Med. 258: 77, 1958.
9. Ehrich, William E., Forman, Carolyn W., and Seifer, Joseph: Difuse glomerular nephritis and lipid nephrosis. A.M.A. Arch. Path. 54: 463, 1952.
10. Ellis, A.: Natural history of Bright's Disease: Clinical, histological and experimental observations. Lancet 1: 1, 34 and 72, 1942.
11. Emerson, Kendall, Jr., Futcher, Palmar, H., and Farr, Lee E.: The relation of high and low urea clearances to the inulin and creatinine clearances in children with the nephrotic syndrome. J. Clin. Invest. 20: 361, 1941.
12. Farquhar, Marilyn G., Vernier, Robert L., and Good, Robert A.: Studies on familial nephrosis. II. Glomerular changes observed with the electron microscope. Am. J. Pathol. 33: 791, 1957.
13. Fellers, Francis X., and Shahidi, Nasrollah T.: The Nephrotic syndrome induced by penicillamine therapy. A.M.A. J. Dis. Child. 98: 669, 1959.
14. Fetterman, George H., and Feldman, Joseph D.: Congenital anomalies of renal tubules in a case of infantile nephrosis. A.M.A. J. Dis. Child. 100: 319, 1960.
15. Galan, E., and Maso, C.: Needle biopsy in children with nephrosis. A study of glomerular damage and effect of adrenal steroids. Ped. 20: 610, 1957.
16. Gitlin, David, Janeway, Charles A., and Farr, Lee A.: Studies on the metabolism of plasma proteins in the nephrotic syndrome. I. Albumin, gamma globulin, and iron binding globulin. J. Clin. Invest. 35: 44, 1956.
17. Gitlin, D.: Some concepts of plasma protein metabolism. Ped. 19: 657, 1957.
18. Good, R. A.: Editorial Comment. A.M.A. J. Dis. Child. 100: 332, 1960.
19. Good, R. A., Vernier, R. L., and Smith, R. T.: Serious untoward reactions to therapy with cortisone and adrenocorticotropin in pediatic practice. Ped. 19: 95 and 272, 1957.
20. Greenman, Lawrence, Weigand, F. A., and Danowski, T. S.: Therapy of the nephrotic syndrome. A.M.A. J. Dis. Child. 89: 169, 1955.
21. Heymann, W., and Hackel, D. B. The early development of anatomic and blood chemistry changes in the nephrotic syndrome in rats. J. Lab. and Clin. Med. 39: 1, 1952.
22. Heymann, Walter: Pathogenesis of the nephrotic syndrome: Considerations based on clinical and experimental studies. J. of Ped. 58: 609, 1961.
23. Heymann, Walter, Gilkey, Caroline and Lewis, Mildred: The prognostic significance of globulinuria in the nephrotic syndrome. A.M.A. J. Dis. Child. 91: 571, 1956.
24. Heymann, Walter, Rothenberg, Michael B., Gilkey, Caroline and Lewis, Mildred: Difference in color of hematuria in the nephrotic syndrome and glomerulonephritis. Ped. 21: 375, 1958.
25. Iverson, Paul and Brun, Claus: Aspiration biopsy of the kidney. Am. J. Med. 11: 324, 1951.
26. James, John, Gordillo, Gustavo, and Metcalf, Jack: Effects of infusion of hyperoncotic dextran in children with the nephrotic syndrome. J. Clin. Invest. 33: 1346, 1954.
27. Keitel, Hans G., Goodman, Howard C., Havel, Richard, Jr., Gordon, Robert S., and Baxter, James H.: Nephrotic syndrome in congenital quartan malaria. J.A.M.A. 161: 520 1956.
28. Lambie, A. T. and MacFarlane, A.: Clinicopathological study of diabetic glomerulosclerosis. Quart. J. Med. 24: 125, 1955.
29. Lange, Kurt: Discussion in Transactions of the American Pediatric Society. A.M.A. J. Dis. Child. 98: 449, 1959.
30. Lange, Kurt, Graig, F., Aberman, J., Slobody, L., Oger, G., and LaCosto, F.: Changes in serum complement during the course and treatment of glomerulonephritis. A.M.A. Arch. Int. Med. 88: 433, 1951.
31. Lange, Kurt, Slobody, L., and Strang, Ruth: Prolonged intermittent ACTH and cortisone therapy in the nephrotic syndrome. Immunologic basis and results. Ped. 15: 156, 1955.
32. Lange, Kurt, Strang, Ruth, Slobody, Lawrence B., and Wenk, Eugene, J.: The treatment of the nephrotic syndrome with steroids in children and adults. A.M.A. Arch. Int. Med. 99: 760, 1957.
33. Lindsay, S.: Primary systemic amyloidosis with nephrosis. Am. J. Med. 4: 765, 1948.
34. Longcope, W. T.: Pathogenesis of glomerular nephritis. Bull. Johns Hopkins Hosp. 45: 335, 1929.
35. Luetscher, John A., Jr., Hall, Alastair, D., and Kremer, Virginia L.: Treatment of nephrosis with concentrated human serum albumin. II. Effects on renal function and on excretion of water and some electrolytes. J. Clin. Invest. 29: 896, 1950.
36. McCrory, W. W., Rapoport, M., and Fleisher, D. S.: Estimation of severity of the nephrotic syndrome in childhood as a guide to prognosis. Ped. 23: 861, 1959.
37. Mellors, Robert C., and Ortega, Louis G.: Analytical pathology, III. New observations on the pathogenesis of glomerulonephritis lipid nephrosis, periarteritis nodosa, and secondary amyloidosis in man. Am. J. Path. 32: 455, 1956.
38. Metcalf, Jack, Kelsey, W. M., and Janeway, C. A.: The nephrotic syndrome in children: An interpretation of its clinical, biochemical, and renal hemodynamic features as variations of a single type of nephron disease. J. Clin. Invest. 30: 471, 1951.
39. Muehrcke, Robert C., Kark, Robert M., Pirani, Conrad L., and Pollak, Victor E.: Lupus nephritis, a clinical and pathological study based on renal biopsies. Medicine 36: 1, 1957.
40. Oliver, Jean: Microcystic renal disease and its relation to "infantile nephrosis." A.M.A. J. Dis. Child. 100: 312, 1960.
41. Orloff, Jack, Welt, Louis G., and Stone, Lyman: The effects of concentrated salt-poor albumin on the metabolism and excretion of water and electrolytes in nephrosis and toxemia of pregnancy. J. Clin. Invest. 29: 770, 1950.
42. Page, Irving H., Kirk, Esben, and Van Slyke, Donald D.: Plasma lipids in chronic hemorrhagic nephritis. J. Clin. Invest. 15. 101, 1936.
43. Pease, Daniel C., and Baker, Richard F.: Electron microscopy of the kidney. Am. J. Path. 87: 349, 1950.
44. Pollak, Victor E., Kark, Robert M., Pirani, Conrad L., Shafter, Harold A., and Muehrcke, Robert C.: Renal vein thrombosis and the nephrotic syndrome. Am. J. Med. 21: 496, 1956.
45. Riley, Conrad M., and Scaglione, Peter R.: Current management of nephrosis. Ped. 23: 561, 1959.
46. Riley, Conrad M.: Proc. Eleventh Annual Conf. on the Nephrotic Syndrome. Edited by Jack Metcalf, National Kidney Disease Foundation, Inc., 1959, p. 284.
47. Rytand, David A.: Fatal anuria, the nephrotic syndrome, and glomerular nephritis as sequels of the dermatitis of poison oak. Am. J. Med. 5: 548, 1948.
48. Rytand, David A.: Onset of the nephrotic syndrome during a reaction to bee sting. Stanford Med. Bull. 13: 224, 1955.
49. Schreiner, George E.: Chlorthiazide in renal disease. Ann. N. Y. Acad. Sci. 71: 420, 1958.
50. Vernier, R. L., Brunson, J. G., and Gavel, R. A.: Studies on familial nephrosis. I. Clinical and pathological study of four cases in a single family. A.M.A. J. Dis. Child. 93: 469, 1957.
51. Vernier, Robert L., Farquhar, M. G., Brunson, Joel G., and Good, Robert A.: Chronic renal disease in children. Correlation of clinical findings with morphologic characteristics seen by light and electron microscopy. A.M.A. J. Dis. Child. 96: 306, 1958.
52. Vernier, Robert L., Worthen, Howard G., and Good, R. A.: The pathology of the nephrotic syndrome. J. of Ped. 58: 620, 1961.
53. West, C. D.: Use of combined hormone and mechlorethamine (nitrogen mustard) therapy in lipoid nephrosis. A.M.A. J. Dis. Child. 95: 498, 1958.
54. Wilson, S. G. F., and Heymann, Walter: Acute glomerulonephritis with the nephrotic syndrome. Ped. 23: 874, 1959.
55. Wilson, Vera K., Thomson, M. L., and Halzel, A.: Mercury nephrosis in young children. British Med J. 1: 358, 1952.
56. Worthen, Howard G.: Discussion in transactions of the American Pediatric Society. A.M.A. J. Dis. Child. 98: 449, 1959.
57. Worthen, Howard G., Vernier, Robert L., and Good, Robert A.: Infantile Nephrosis. A.M.A. J. Dis. Child. 98: 731, 1959.

KERATINIZATION: A Review*

EDWARD SMITH, M.D.
MARK ALLEN EVERETT, M.D.

THE KERATIN, or dead outer horny layer of the skin, is the interface between ourselves and our environment. Regarded as essentially inert for many years, recent investigative studies have clarified its physiological role. This review summarizes the known facts regarding the development and function of keratin.

Keratinization is the transformation of living epithelial cells into horny material. It is important to distinguish between "keratins" and "keratinous structures." Keratins are epidermal proteins obtained from keratinous structures such as hair, nails, and stratum corneum which have a variable amino acid composition. Composition is influenced by such things as velocity of keratinization, nutrition, temperature, and solar radiation.

Keratin has been divided roughly into two types: soft and hard. Stratum corneum is soft. Horn, nail, claw and hoof are examples of hard keratin. Hair, wool and feather are classed as hard but contain soft keratin in the medulla and in the central canal. Differences in soft and hard keratin are: (1) soft has a relatively low degree of consolidation while hard is more coherent and has higher tensile strength; (2) hard is rich in sulfur, having up to five per cent; soft contains on the order of one per cent; (3) soft contains more lipid and glycogen than hard; (4) arginine is present in larger amount and in larger proportion to lysine in hard than in soft keratin; (5) histologically, soft keratin has a narrow transitional zone from germinal layer to the keratinized layer while hard keratin has a wide transition zone; (6) finally, structures forming hard keratin are more complex and specialized, e.g., they may have a more liberal blood supply.[1]

Physiological stimuli to keratinization include ultraviolet radiation, trauma and state of nutrition. Miescher[2] first demonstrated microscopically the keratin response to ultraviolet light. A reciprocal relationship to pigmentation has been shown by Everett.[3] Sokolov[4] recently measured epidermal thickness of desert rodents in winter and summer and showed a twofold increase in the malpighian layer during summer as opposed to winter while stratum corneum was thicker in winter when coat growth was accelerated.

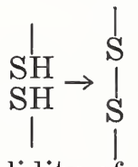
Since the protein that is keratin develops from the epithelial cells, an examination of the epithelial cells is indicated. Epidermal cells consist of two physically and chemically different groups of proteins. The first is a fibrillary framework ("spongioplasma") and the second a microscopically amorphous material ("granuloplasma") which fills the spaces between the fibrils. The former is a fibrous protein, the later globular. The

*Department of Dermatology, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

fibrillary material is referred to as "tonofibrils."[5]

The proteins of keratin are fibrous in type. Keratin fibers and tonofibrils have the same x-ray spectrogram. This does not prove that they are identical, but this plus evidence to be presented is suggestive that they are.

Probably the most important difference, and the only consistent chemical difference between keratins and cell proteins is the higher cystine formula content of keratins. The increase in cystine is associated with a decrease in sulfhydryl-containing amino acids. It is postulated, and there is little doubt, that the explanation for this is that during keratinization sulfhydryl-containing amino acid residues facing each other on neighboring polypetide chains will close to form a disulfide cross linkage



This adds to the solidity of the molecule and increases its resistance to enzymatic and chemical hydrolysis. The catalyst for this reaction is copper. This reaction forms the basis for the cold wave process wherein hair is fashioned into the desired style and maintained so by curlers. Then a reducing solution such as thioglycolate is applied. This breaks the disulfide cross linkages reducing them back to sulfhydryl groups and leaving a variety of side-chain fragments. When the reducer is neutralized, permanent new disulfide cross linkages are established which hold the hair in place.

Also contributing to the solidity of the horny layer are hydrogen bonds and salt linkages formed during keratinization. How they are formed is not known.

Another important characteristic of keratin is its higher sulfur content. There is an absolute increase in the amount of sulfur as keratin develops from cellular protein. The explanation is that during keratinization there is a hydrolytic splitting-off of amino acids which do not contain sulfur.

A recently published characteristic of the keratinous layer is the presence of relatively abundant quantities or urocanic acid.[6] The amount of urocanic acid in general parallels the degree of cornification and plays a role in protection of the skin from harmful effects of solar radiation due to its high absorption of wavelengths of light in the UV spectrum.

Glycogen is found in the outermost cell layers of the stratum malphigii and in the stratum granulosum but it is not found in the horny layer. Its role is believed to be that of supplying energy for the protein synthesis involved in keratinization.

Living cells contain 70-80 per cent water. Most of this is lost in keratinization. Some examples of water content are: human hair 8.6 per cent, human nails 10.5 per cent, psoriatic scales 8.5 per cent, ichthyotic scales 11.5 per cent, scales in scarlet fever 20 per cent.[5] The mechanism of dehydration is not understood; it is possible that it has something to do with the uncoiling of polypeptide chains and the close packing of the fibrillary crystallites.

Lipids in the epidermal cells exist mostly as lipoproteins, but in the horny layer they are separated and decreased in amount.

As cytoplasmic keratinization proceeds nuclear decomposition occurs. This leads to the release of purines, ribose, and desoxyribose as the nucleoproteins are broken down.

Keratinization is first evident in the walls of the cells of the upper malpighian layer of the epidermis. Whether there are preformed fibrous proteins in these cell walls is not known. Where the tonofibrils are discernible, however, there is histochemical evidence to suggest that they are the crystallization centers of keratin formation.

The cells of the stratum granulosum and stratum lucidum contain microscopically visible corpuscular elements—the keratohyalin granules and the eleidin droplets. What role they play, if any, in keratinization is not known; it is not even known of what they are composed. They possibly are proteins or protein decomposition products. Other prominent suggestions as to their nature, in the past, have been: ribonucleic, acid, iron, copper, or calcium.

In 1957 Laden, Gethner, and Erickson[7] presented electron micrographs (magnification 7940X and 6750X) that seemed to show keratohyalin granules being transformed into keratin fibers. This supported old views

that keratohyalin is a keratin precursor and is in contrast to recent biochemical evidence that it is not. Supporting this theory has been the demonstration in epidermis of what has been designated as prekeratin. In 1956 Roe[8] extracted human epidermis with 75 per cent lithium bromide solution. She obtained a fibrous protein that had an alpha x-ray diffraction diagram similar to epidermal keratin. There were other physical and chemical points of similarity. She also demonstrated histochemically that tonofibril dissolution was one of the earliest changes taking place during this extraction. None of this fibrous protein could be extracted from hair and only small quantities from callous. She concluded that tonofibrils were a keratin precursor in a fibrous form at a stage prior to the stabilization of the molecule.[9]

In 1960, Brody[10] submitted the dorsal skin of albino guinea pigs to electron microscopy (magnification up to 110,000X). He confirmed an earlier report by Selby[11] that showed that the tonofibrils in the stratum malpighii were composed of submicroscopic filaments called "tonofilaments." Brody also demonstrated keratin filaments with a similar pattern in the stratum corneum. Both filaments had a diameter of about 100°A. In the stratum malpighii the tonofilaments stained readily while in the stratum granulosum there was less affinity for the stain and in the stratum corneum the keratin filaments were completely unstained. The oxidation of sulfhydryl to disulfide was offered as a possible explanation for the gradual loss of affinity for the stain. Tonofilaments were presumed to be precursors of keratin filaments.

The horny layer is not a syncytium. Wide distinct cell boundaries may be discerned throughout its width.

Finally, Brody demonstrated mitachondria-like structures in the cells of the stratum corneum. Mitachondria had previously been thought to disappear at the transition to this layer. They are generally conceded to be important in the physiology of living cells. If these structures actually are mitachondria, it suggests vitality of tissue previously regarded as dead. This lends support to the theory that keratinocytes may actively produce urocanic acid. Hackness and Bern[12] as well as Fleischer et al.[13] by carbon 14 labelling concluded that keratin was synthesized *de novo* in the keratogenic zone of hair rather than by an apposition of sulphur compounds to the tonofibrils. Recently Debersagues and Rothman[14] demonstrated that the incorporation of several amino acids into hair occurred uniformly with respect to time suggesting that keratins are formed directly from free amino acids, part of which, physiologically, may originate from the breakdown of proteins in the cells of the keratogenic zone prior to keratinization.

In the animal world keratinous structures are common. One of the structures about which confusion may exist is horn. The horns of deer consist of bone, and are processes of the frontal bone; those of the giraffe are independent bones or "epiphyses" covered by hairy skin; those of oxen, sheep, antelopes are "apophyses" of the frontal bone, covered by the corium and by a sheath of true horny material; those of the pronghorned antelope consist at their bases of bony processes covered by hairy skin, and are covered by horny sheaths in the rest of their extent. Only the horns of the rhinoceros are composed wholly of horny matter, and this is disposed in longitudinal fibers so that the horns seem rather to consist of coarse bristles compactly matted together in the form of a more or less elongated subcompressed cone. Keratin forms not only the horns of the ox tribe, but also the hoofs, claws, and nails of animals generally, the carapace of tortoises and armadilloes as well as porcupine quills, fur, wool, and birds' feathers.[15]

The normal fate of keratin is disintegration of the keratin fibrils into submicroscopic particles at the surface. Normally, no scales are seen. *Visible scales* appear by two mechanisms: first, an accelerated rate of keratinization secondary to accelerated epithelial proliferaton; second, by cracking of the horny layer into microscopically visible plates. Rapid keratinization is incomplete. Why this inhibits the final degradation to submicroscopic particles is not known. Microscopically, one sees hyperkeratosis and parakeratosis. Clinical conditions in which this process occurs are psoriasis, and exfoliative dermatitis. By the second mechanism there is no acceleration of keratinization. The best example of this type is ichthyosis vul-

garis. In ichthyosis desquamation is retarded. "Superkeratinization" is defined as a reaction of the epidermis to form more adherent and more keratinized horny lamellae than normal, with a decreased tendency to shed. This means becoming more like hard keratin which in turn means more pronounced formation of disulfide cross-linkages, loss of -SH groups, and loss of water. Superkeratinization is the introductory phase to *precancerous lesions* of skin and mucous membrane. These are the earliest changes in keratoses, cutaneous horns, and leukoplakia.

Thus it may be concluded that the keratin layer is a component of the skin fulfilling general as well as specialized functions in the protection of the organism. Formerly thought to be an inert mass of dead cells, it has now been shown to play an active role in the continual interaction between the animal and its environment. □

BIBLIOGRAPHY

1. Ward, Wilfred, and Lundgren, Harold: "The formation, composition, and properties of the keratins." Advances in Protein Chemistry 9:243:54.

2. Miescher, G.: "Das problem des lichtschutzes und der lichtgewohnung." Strahlentherapie 35:403:30.

3. Everett, Mark Allen: "Protection from sunlight in vitiligo." Arch. Derm. 84:997-8:61.

4. Sokolov, W.: "Skin adaptations of some rodents to life in the desert." Nature 193:823:62.

5. Rothman, Stephen: "Physiology and Biochemistry of the skin." Univ. Chicago Press, Chicago 54.

6. Anglin, J. H., Jr., Bever, A. T., Everett, M. A., Lamb, J. H.: "Ultraviolet-light-induced alterations in urocanic acid." Biochem. Biophys. Acta: 53:408-9:61.

7. Laden, Edward, Gethner, Paul, and Erickson, John: "Electron microscopic study of keratohyalin in the formation of Keratin." Jour. Invest. Derm. 28:325:57.

8. Roe, D. A.: "A fibrous keratin precursor from the human epidermis." Jour. Invest. Derm. 27:1:56.

9. Roe, D. A.: "Further studies of a fibrous keratin precursor from the human epidermis." Jour. Invest. Derm. 37: 319:56.

10. Brody, Isser: "An electron microscopic investigation of the keratinization process in the epidermis." Acta Dermato-Venerologica 40:74:60.

11. Selby, C. C.: "An electron microscope study of the epidermis of mammalian skin in thin sections." Jour. Biophy. & Biochem. 1:429:55.

12. Harkness, D. R., and Bern, H. A.: "Radiautographic studying hair growth in the mouse." Acta. Anot. 31:35:57.

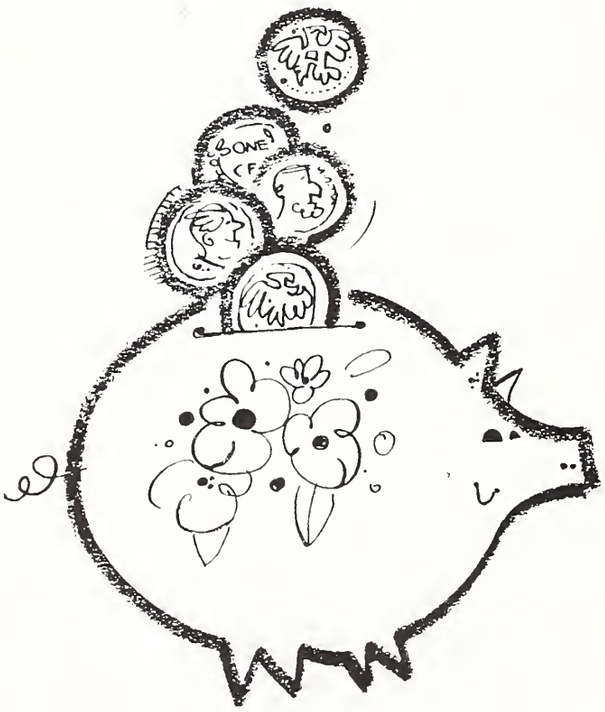
13. Fleischer, S., Lietze, A., Walter, H., and Hawriowitz, F.: "Conversion of serum proteins into tissue patterns." Proc. Soc. Exptl. Biol. & Med. 101:860:59.

14. Debersagues, J. and Rothman, S.: "Mechanism of keratin formation." Nature 193:147:62.

15. Encyclopedia Brittanica 1955.

Edward Smith, M.D.
800 N.E. 13th Street, Oklahoma City, Oklahoma

Let's keep investing in the future of medicine



AMA-ERF
NEEDS YOUR FULL
SUPPORT

Doctors contributions should be sent to:

MRS. VIRGIL RAY FORESTER
2336 BELLEVIEW
OKLAHOMA CITY, OKLAHOMA

ABSTRACTS

TRICUSPID BLOCKADE

A 74-year-old woman was placed in the hospital because of acute myocardial infarction and hypertension, the latter of several years' duration. Cardiac insufficiency was manifested by basilar rales bilaterally, a firm, tender liver edge palpable 4 cm. below the right costal margin, and moderate pitting edema of the ankles. Although the lower legs were tender to pressure, Homan's sign was not present then or subsequently. The patient was treated with digitalis and a thiazide diuretic and also received anticoagulant therapy by means of heparin and warfarin sodium.

On the sixth hospital day, a pericardial friction rub was observed and the anticoagulant was discontinued for three days. Although the initial chest pain disappeared shortly after admission, the patient continued to have pain in the legs which remained edematous, warm, and very tender to touch. On the morning of the twenty-eighth hospital day, she suddenly complained of upper abdominal pain, weakness, and breathlessness and rapidly died.

An autopsy, in addition to evidence of a recent anteroseptal myocardial infarction, a 4.5 cm. embolus was discovered entangled in the chordae tendineae of the tricuspid valve holding the anterior and medial cusps in the closed position and effectively obstructing the flow of blood. The source of the embolus was not definitely determined.*

REVIEWER'S NOTE: Embolism to the right side of the heart has been reported only infrequently; usually the bolus is flushed along until it becomes "sieved-out" in the pulmonary arterial tree. Without the necropsy, this diagnosis almost certainly would not have been made. It would appear, however, to also point out that the presently available anticoagulant regimens are not entirely satisfactory, and that even when they are successfully established, they neither filter out nor dissolve previously formed clots.

*Embolism to the Right Side of the Heart. Herbert B. Hudnut, Jr., Charles Key, and William E. Jacques. American Heart Journal 63:743-746 (June) 1962.

DETERMINING RADIOSENSITIVITY OF CERVICAL CANCER

Although cancer of the cervix is usually a radiosensitive tumor, there are some that prove to be radioresistant. If radioresistance can be determined prior to or early in the course of radiotherapy, such cases might be salvaged by surgery.* This is of particular importance in the management of patients with early disease, technically operable, whose tumor is radioresistant. The author outlines techniques for evaluation of radiosensitivity as first, tumor characteristics and response, and second, host characteristics and response both before and during radiation therapy. These include cytological, cytochemical, and histologic responses of both the malignant cervical and normal host vaginal tissues.

The author describes his personal experience utilizing a combination of the above techniques. Cervical biopsies and vaginal smears were taken weekly from all patients with carcinoma of the cervix undergoing irradiation therapy. He found the cytological serial radiation response index was abnormally high in older patients and in those patients receiving supervoltage radiation. Furthermore the cytological method of predicting radiation response was of limited value in cases of very early or very late disease. The histological prognosis correlated well with the clinical outcome and was thought to be more reliable. The results of the cytochemical technique were similar to those of the histological method. In eighty-nine per cent of patients there was correlation between techniques and in these patients with good responses 86 per cent were free of tumor while none with poor responses were free. The difference in prognostic accuracy between cytology, biopsy, or a combination of both was 81 per cent, 84 per cent and 86 per cent respectively. The ability to predict a poor response is better by biopsy than cytology, and even better when cytology and biopsy agreed, 64 per cent, 92 per cent, and 100 per cent respectively. The author stresses the future importance of these techniques in determining the effect of adjunctive therapy or radiosensitivity of cervical cancer and increasing understanding of tumor biology and tumor-host interaction.

*Radiosensitivity of Cervical Cancer. James A. Merrill. Surgical Clinics of North America. 42:985-1004 (August) 1962.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Abberations in Control Mechanisms in Minimal Deviation Hepatomas. H. C. Pitot, C. Peraino, and R. H. Bottomley. Proceedings of the American Association for Cancer Research 3:351, 1962.

The Incidence and Significance of Cryofibrinogenemia. P. A. McKee, J. M. Kalbfleisch, and R. M. Bird. Clinical Research 10:56, 1962.

Immunologic Reactions to Human Chorionic Gonadotropin. D. K. Keele, J. Remple, J. Bean, and J. Webster, Journal of Clinical Endocrinology and Metabolism. 22:287, 1962.

The Effect of Pulmonary Artery Banding in Infants with Pulmonary Plethora due to Cardiac Anomalies other than Ventricular Septal Defects. G. G. Cayler, J. D. Barney, and G. R. Williams. Clinical Research 10:17, 1962.

Studies in Cholesterol Metabolism with C-14 Acetate Diabetic Patients and in Patients with Hypercholesterolemia. A. R. Hennes, M. Z. Moore, and Y. F. Masters. Metabolism 11:925, 1962.

Reprints of the above publications are usually available on request from the senior author, c/o Mrs. Joan Campbell, Veterans Administration Hospital, 921 N.E. 13th Street, Oklahoma City, Oklahoma.

your host *on the* coast...

AMERICAN MEDICAL ASSOCIATION

16TH CLINICAL MEETING

Los Angeles
November 25-28

America's fastest growing city plays host to the nation's biggest winter medical session—the AMA Clinical Meeting. For the first time in eleven years, the AMA will present in Los Angeles a complete, comprehensive four-day program featuring the newest advances in medicine.

Planned for every physician, the entire scientific program, scheduled in convenient Shrine Auditorium, offers the most up-to-date "refresher courses" and findings in recent research.

SPECIAL PROGRAM HIGHLIGHTS
SUNDAY THROUGH WEDNESDAY

Air pollution and pulmonary disease
Viral hepatitis
Clinical nuclear medicine
Depression and suicide
Surgery—general, dermatologic, thoracic and neurologic
Cancer—etiology, pathogenesis, and chemotherapy
Orthopedics
Children's growth disturbances
Cineradiography
Anesthesiology
Forensic medicine
Aerospace medicine
Obstetrics and gynecology
Cardiovascular disease
Viruses
Otolaryngology
Rhinology
100 Original Papers
200 Exhibits
Color TV
Motion Pictures

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street • Chicago 10, Illinois

See JAMA October 27 for complete scientific program, for physician registration and hotel reservation forms.

WHEN WINTER COMES, "CATCH UP" AT THE AMA CLINICAL MEETING IN CALIFORNIA

OSMA JOURNAL / news

Congress Concedes Tax Equity for Pension Plans of the Self-Employed

Climaxing twelve years of frustrating legislative setbacks, some nine million self-employed Americans finally won a watered-down tax relief program from the U.S. Congress. On October 10th, President Kennedy signed H.R. 10, **The Self-Employed Individuals Tax Retirement Act** (P.L. 87-792), and partially corrected the longstanding discriminatory treatment of pension plans for this group.

For many years, the Treasury Department has allowed tax-deferred pension and profit-sharing plans for employees of corporations, but self-employed persons have had to provide for their retirement with pension plans created through the accumulation of tax-paid dollars.

The new law, effective January 1, 1963, will permit a self-employed person to make retirement contributions to a qualified plan of up to $2,500 annually and to take a tax deduction on half that amount.

The tax break accomplished by the passage of H.R. 10 was far short of the hopes of the American Thrift Assembly, the lobbying force which represented the American Medical Association and other self-employed groups.

On two previous occasions, the House of Representatives passed more liberal versions of H.R. 10, only to be blocked by a reluctant Senate. During this session of Congress, the House-passed version would have allowed a full tax deduction on ten per cent of annual earned income—or $2,500—whichever the lesser.

The Senate Finance Committee whittled at the House bill, by recommending a 100 per cent tax deduction on the first $1,000 paid into such a plan and 50 per cent on the balance. Senate opponents of the measure, however, rammed through even greater curtailments of the potential tax benefits.

Even after the modified H.R. 10 received Senate approval by a 70-8 vote, supporters feared a pocket veto by President Kennedy who reportedly didn't like the $115 million bite the bill will make yearly in treasury revenues. His acquiescence in signing the bill into law was interpreted by some to be a result of pressure applied by several powerful Senators, and was thought by others to be a peace offering to physicians who beat him in his bitter fight for social security-financed health care.

With all its faults and restrictive pitfalls, the **Self-Employed Individuals Tax Retirement Act** is still a blessing for many professional and business people and is looked upon as a foot-in-the-door for more equitable tax treatment in future sessions of Congress.

Provisions of P.L. 87-792

Below is a nutshell report on the provisions of Public Law 87-792.

Briefly, a self-employed person (including a partner) can contribute part of his earnings each year—up to ten per cent of his net earnings or $2,500, whichever is smaller—to a qualified pension or profit sharing plan covering himself.

Dollars set aside for future years cut current income taxes. In computing his adjusted gross income for tax purposes, the self-employed individual can deduct half the amount he puts into a plan which is approved by Internal Revenue.

Amounts put into such a plan, as well as the earnings of the contributions, accumulate tax-free. Thus, a person may defer payment of taxes during periods of high earnings and concomitant high taxes, and settle his debt to Internal Revenue at the time the plan matures, when the individual's tax bracket is ordinarily lower.

Employees Covered

If a self-employed person has employees, in order to take advantage of the new law, he must include in his plan all full time employees who have worked for him three years or longer.

Contributions made on behalf of employees are completely tax deductible, whereas the physician may deduct only half of the contribution made for himself. Employees must be given an immediate vested interest in the plan, and contributions on behalf of the employer can't discriminate in his favor as compared to contributions for employees.

Example: A physician has two employees who have worked for him at least three years. His earned income is $25,000 and he pays his employees a combined $8,000 annually. If he makes the maximum allowable contribution for his own pension plan of ten per cent ($2,500), he must also set aside 10 per cent of the employees annual income, or $800. For current income tax purposes, he will be able to deduct $800 for the employees contributions and $1,250 for his own.

Qualified Plans

Traditionally a retirement plan can be one of two basic types—a pension

plan or a profit-sharing plan. A pension plan calls for either definitely determinable retirement benefits or definite contributions to provide retirement benefits, regardless of the employer's profit picture. Under a profit-sharing plan, however, the employer's contributions come only out of profits.

It is generally recommended that a self-employed physician would be better off with a "money-purchase" plan. This requires a contribution of a fixed amount each year, usually a stated percentage of the participant's pay.

However, a self-employed person who must cover eligible employees will sometimes prefer a profit-sharing plan. Such a plan must have a definite formula for computing the participant's share of the profits, but has the advantage of being based on a sliding scale according to the income of the enterprise.

Once the general approach to the pension or profit-sharing plan is decided, the selection of savings media can be made. There are several choices available under the Internal Revenue Code.

Trusteed Plan: The contributions to the plan are turned over to a bank as trustee. The trustee can then invest them in stocks, bonds, mutual funds, annuities, life insurance contracts, or other investments. Investment decisions can be controlled by the self-employed person setting up the plan.

Insurance and Annuity Plans: In addition to the trusteed plan, one of the following is available:

A. Trusteed insurance plan where someone other than a bank is trustee. Here the trust investments must be limited to an annuity, endowment or life insurance program, and the insurance company must supply whatever information about the trust the Treasury Regulations will require.

B. Custodian Account: No trust is required. Contributions are turned over to a special bank custodial account and invested solely in endowment, annuity or life insurance.

C. Direct Purchases: No trust is required where annuities or face amount certificates are purchased.

Special Mutual Fund Plan: Custodial bank account where the contributions are invested exclusively in stock of a mutual fund or other regulated investment company which issues only redeemable stock.

U.S. Bond Purchases: Contributions can be used to purchase directly a new special issue of U.S. Bonds (interest rate not yet determined) which would pay out principal and accumulated interest when cashed in at retirement.

Examples of Benefits

Compare the situation of a sole practitioner (without employees) before and after the new law. Assume he is in the 50 per cent tax bracket ($32,000 per year income and married) and is able to put away $2,500 a year toward his retirement. Under the new law, by putting away the same $2,500, he ends up with an additional $625 of after-tax cash (half of the $2,500 is deductible and in the 50 per cent bracket that saves him $625 in cash).

Further assume the money is invested at four per cent. After 25 years, $2,500 accumulating at the full four per cent (there is no income tax on the earnings) will come to $108,280.

Before the new law, the same $2,500 a year accumulating at four per cent would come to a total of some $81,700. Also, under the new law the additional $625 a year that is available can accumulate to an additional $20,420 (even after taxes are paid each year).

On the payout from the fund, however, there is a tax to be paid. Assume for purposes of illustration that his other income in the year of payout will equal all his deductions so that his payout from the retirement fund will be subject to the lowest possible tax. The tax will be figured this way, according to the formula: The $108,280 accumulated would first be reduced by the twenty-five $1,250 annual contributions which were not deductible (only half of each $2,500 contribution was deductible). That cuts down the taxable portion to $77,030. The tax on one-fifth of that is first figured. On a joint return that is $3,742. This figure is then multiplied by five, giving a total tax of $18,710. Therefore, of the $108,280 accumulation, the physician will keep $89,570. Add to that the $20,420 (after taxes) he has accumulated outside the plan by investing the annual $625 tax savings. The total comes to $109,990, or $28,290 more than he would have realized on the same investment before passage of the new law.

It is emphasized that the above illustration is based upon the assumption that the sole practitioner's other income in the year of payout will equal all his deductions. If not, the tax benefit will be less depending upon his tax bracket. Keep in mind also that the tax computed in the example was based on a lump sum settlement, whereas in many cases there would be a definite tax advantage in taking a payout over a number of years in the form of an annuity.

Distribution of the benefits cannot be made before age 59½ without penalty, except in the case of death or disability, and must be made before the participant reaches age 70½.

Further caution is advised for physicians with a large number of employees who would qualify under the tax-deferred pension program. When faced with the mandate of establishing retirement programs for employees before the employer can participate, there is a point of diminishing returns.

Expert Counsel Advised

In short, the **Self-Employed Individuals Tax Retirement Act** will be of great benefit to many practitioners, particularly those who operate small offices. Due to the restrictions imposed by the law, however, persons considering such a plan should have benefit of expert legal and tax advice. □

County Officers Conference Attracts Sixty Participants

Sixty physicians and auxiliary members came to the 1962 Conference of County Medical Society Officers and went away with the satisfaction that their time was well spent.

It was a trial balloon—staged by the Council on Public Policy to test the meeting's value as an annual briefing session for the leaders of organized medicine in Oklahoma. The October 28th event in Oklahoma City's Skirvin Hotel was basically a how-to-do-it session, with the primary purpose of assisting state and county officers in achieving better coordination and effectiveness in their programming of association activities.

Federal legislation — past, present and future — was discussed at length by well-informed speakers representing all three levels of organized medicine.

Heading the list of speakers on this subject was Ernest B. Howard, M.D., Assistant Executive Vice-President of the American Medical Association. Doctor Howard described AMA activities in the legislative arena, disclosed knowledgeable insight regarding social security health legislation, and offered practical suggestions to better meet the growing challenge of a powerful coalition between organized labor and high government officials.

He expressed optimism for the future "if medicine and its many allies continue to work hard for the preservation of freedom in health care.

"Our position on the social security issue is sound," he said, "and we are gaining strength with each battle we win in Washington."

Also encouraging accelerated activity on legislative affairs were A. M. Edwards, Field Service Division, AMA; Rex E. Kenyon, M.D., Chairman of the Council on Public Policy; and, Howard A. Bennett, M.D., Chairman of the Tulsa County Doctors Committee.

The OSMA's organizational plan was layed out by Doctor Kenyon for the next legislative campaign against the controversial health care bill. Doctor Bennett offered practical suggestions for organizing and financing a local campaign.

Steve Stahl, Executive Vice-President of the Oklahoma Public Expenditures Council, presented one of the most interesting talks of the afternoon, as he discussed the fiscal irresponsibility of government at both state and national levels. He called for unified effort from the many groups opposing rampaging socialism.

It's not enough to defeat a bill in the statehouse or Washington, according to Milton V. Davis, M.D., national treasurer of AMPAC, "physicians, their wives and other responsible citizens must participate more actively in the selection of political candidates." In his presentation, "Coping with Congress," he described the philosophy and program objectives of AMPAC and its state affiliate, the Oklahoma Medical Political Action Committee.

Program participants had a good look at themselves in the mirror, as presented by newspaper managing editor Charles L. Bennett in his talk, "People Who Read Newspapers." His candid remarks, both flattering and critical, elicited enthusiastic response for the remarks of the Daily Oklahoman and Times representative.

Program planner Kenyon did not leave it to chance that county leaders would be without inspiration to improve the image of the profession in their home towns. The afternoon closed with an "idea session" for community service projects suitable for county medical society implementation.

An oral polio immunization campaign was described by Bruce R. Hinson, M.D., who managed the successful program of the Garfield-Kingfisher Counties Medical Society. How-to-do-it kits prepared by the three manufacturers of Sabin vaccine were distributed to the audience.

Lou Polk, Safety Consultant of the State Health Department, encouraged county medical societies to undertake leadership in the promotion and use of automobile safety belts. He distributed a campaign program and materials to the participants and demonstrated television tapes and transcribed radio announcements which are available for local use.

Paul D. Erwin, M.D., Chairman of the OSMA's Council on Public Health, announced that April would be designated "Immunization Education Month" by the OSMA. The program for this promotion is mentioned elsewhere in this issue of *The Journal.*

Rounding out the exchange of public relations ideas, Doctor Kenyon offered the county officers the excellent Public Relations Handbook prepared by the AMA. He stressed the value of health education fairs, emergency call systems, radio and television panels, etc., as public relations tools which may easily be employed by a county society, regardless of its size.

While external relations with the public were stressed by the conference, other speakers informed the county leaders of the OSMA's well-developed postgraduate education programs and the new Program Bureau Service offered through the OSMA Executive Office. □

Endowment Received

Baptist Memorial Hospital, Oklahoma City, received $10,000 for endowment from the estate of the late Doctor Samuel E. Frierson.

Frierson, member of the First Baptist Church, Oklahoma City, practiced medicine in Oklahoma City for over 40 years. He died earlier this year.

"This bequest is the first of its kind to the hospital," announced Doctor Auguie Henry, executive secretary-treasurer, Baptist Foundation, "and it will be set up in trust as endowment with the income to be paid to the hospital annually."

An active member of the Oklahoma State Medical Association and the Oklahoma County Board of Mental Health, Doctor Frierson will be memorialized at the hospital. □

House of Delegates Meeting Called

A special, called meeting of the House of Delegates of the Oklahoma State Medical Association has been called by president Carlock for November 18, 1962. The meeting will be held at OSMA headquarters, 601 N.W. Expressway, Oklahoma City.

The purpose of the meeting, as announced in the call, is to select an Oklahoma candidate for election to the Board of Trustees of the American Medical Association. Several positions on the AMA Board will be filled at the June meeting of the AMA House of Delegates in Atlantic City, New Jersey. □

Immunization Education Campaign Set for April

Under the direction of the Council on Public Health, the Oklahoma State Medical Association will conduct an immunization education campaign during the month of April, 1963.

The Oklahoma State Medical Association will be attempting to inform the public on the dangers existing through the lack of proper immunization against such diseases as smallpox, tetanus, whooping cough, diphtheria and poliomyelitis.

Council Chairman, Doctor Paul Erwin, of Oklahoma City, says, "Rather than attempt a year-around immunization education campaign, far more could be gained by putting emphasis on a one-month, annual program."

TV and radio spots will be made available to the stations throughout Oklahoma as well as news releases to be circulated to the local county societies. Moreover, waiting room posters will be used to gain public acceptance of vaccination for certain diseases.

The individual physician will be urged to stock and distribute vaccination reminder cards to his patients as well as supplying patients with AMA wallet-size shot record cards, which are available to every member physician on request from the AMA office in quantities of 5,000 free of charge.

All county medical societies will be encouraged to use their own initiative and imagination in organizing local tie-ins to the immunization education program to fit their particular areas. □

Association Hosts Student AMA at Annual Banquet

More than two hundred students of the University of Oklahoma School of Medicine, members of the Student American Medical Association, brought their wives and dates to the annual banquet sponsored by the Oklahoma State Medical Association.

The popular event was held October 27th in the Garden Room of Oklahoma City's Huckins Hotel. General officers and trustees of the OSMA served as hosts for the student group.

The students traditionally select an outstanding guest speaker for the banquet meeting which highlights the annual activities of the Student AMA organizational year. This year, Ernest B. Howard, M.D., Assistant Executive Vice-President of the American Medical Association, was chosen to deliver the principal address.

Doctor Howard aimed his message at the social security health care battle being waged on a continuing basis by the AMA. As the leader of the AMA's Legislative Task Force, he predicted victory for the AMA and other groups which favor health care freedom. Following his formal presentation, the students questioned the medical leader at length.

Presiding at the banquet was J. Hoyle Carlock, M.D., OSMA president. S. N. Stone, Jr., M.D., OU Associate Dean of Clinical Instruction, represented the faculty.

Don Farrell, Student AMA president, expressed appreciation for the OSMA hospitality, and pledged close cooperation from the students in furthering the objectives of organized medicine. □

. . . AND WE'LL KEEP THEM HEALTHY ALL SUMMER!

KANAKUK for Boys KAMP

36TH YEAR

- Coaching, competing, and conditioning in all sports.
- White and Buffalo River canoe trips.
- Swimming, diving, water skiing, Scuba diving.
- Riflery, archery and fishing.

IN THE HEART OF THE OZARKS
ON LAKE TANEYCOMO
BRANSON, MISSOURI

KANAKOMO for Girls KAMP

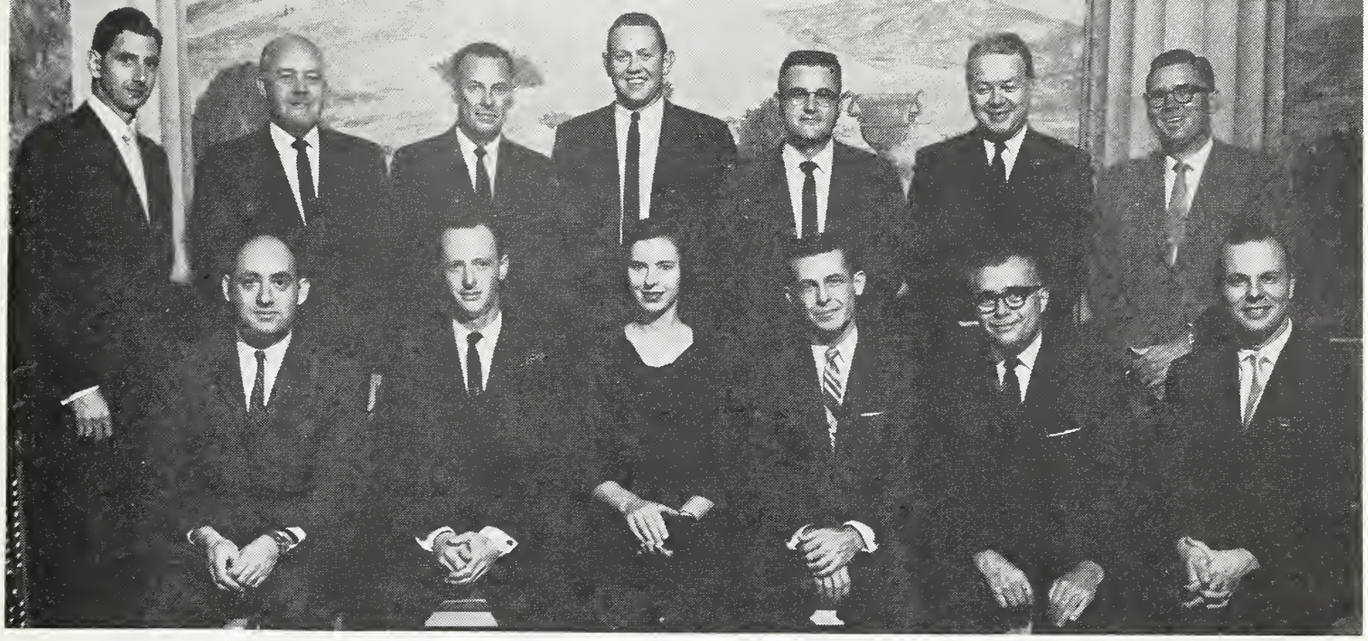
5TH YEAR

- Instruction and play in land sports.
- River and lake canoe trips.
- Art, dance, and crafts.
- Swimming and water skiing.
- Riflery and archery.
- Drama, Poise and Charm.

TWO FIVE WEEK TERMS
Ages: 8 thru 16

Write for catalog, movie dates, and list of Oklahoma Patrons:

Winter Address
C. G. "SPIKE" WHITE
702 Thomas Lane
College Station, Texas



New members of the Tulsa County Medical Society.

Tulsa County Honors New and Senior Members

Tulsa County Medical Society welcomed fourteen new members and awarded an Oklahoma State Medical Association Fifty-Year Pin and Life Certificates to three of its senior members at the Annual Indoctrination Dinner held Monday, October 8, 1962 at the Mayo Hotel in Tulsa.

Featured theme for the evening was "The AMA—What It Is and What It Does" with addresses by Roy T. Lester, M.D., manager of the Washington office of the American Medical Association, and Mr. Thomas A. Hendricks, Executive Assistant, AMA, Chicago, Illinois. William M. Benzing, Jr., M.D., presided.

Seated left to right (above) are Richard E. Land, M.D., radiologist; Jesse E. Pyeatte, M.D., ophthalmologist; Joella C. Pyeatte, M.D., anesthesiologist; James T. Proctor, M.D., psychiatrist; Lynn Heavner, M.D., psychiatrist; and Edward O. Nonweiler, M.D., urologist.

Standing, left to right, are Richard J. Freeman, M.D., ophthalmologist; James G. Moore, M.D., director of postgraduate education at St. John's Hospital; Warren G. Gwartney, M.D., general practitioner; J. C. Devine, M.D., anesthesiologist; Cecil F. Jacobs, M.D., superintendent of the Tulsa City-County Health Department; Ira Daniel Langdon, M.D., associate medical director of Humble Oil Company; and, Robert E. Ashley, M.D., psychiatrist.

Not present when the picture was made was Gregory A. Green, M.D., obstetrician and gynecologist.

Tulsa county president Worth M. Gross, M.D., is shown awarding a Fifty Year Pin to Paul N. Atkins, Sr., M.D., as Paul N. Atkins, Jr., M.D., looks on.

Atkins Recognized

Also honored during the evening was Paul N. Atkins, Sr., M.D., (right, lower photo) shown receiving a gold pin from the Oklahoma State Medical Association in recognition of the completion of fifty years in the practice of medicine. Making the presentation at the ceremonies is Worth M. Gross, M.D., (left below), President of the TCMS. In the center is Doctor Atkins' son, Paul N. Atkins, Jr., M.D., a Tulsa surgeon.

Doctor Atkins, Sr., attended Mt. St. Mary's College and received his medical degree from Georgetown University Medical School in 1912. He interned at Georgetown University Hospital of Washington, D.C., entering practice in Tulsa in 1914. He was Secretary-Treasurer of the Tulsa County Medical Society in 1918, Chief of Staff of Hillcrest Medical Center of Tulsa in 1952-53. He is a general practitioner.

Life Memberships Awarded

OSMA Certificates of Life Membership were also presented by Doctor Gross to Leon H. Stuart, M.D., Tulsa radiologist, and F. L. Flack, M.D., surgeon. □

Auto Safety Belts: Kit for Community Wide Campaign

Automobile accidents claim 38,000 lives each year, and injure and maim 1½ million more. The risk of injury could be reduced by 50 per cent if auto seat belts were universally in use.

According to the OSMA Safety Committee, the time for medical society action is now. The committee encourages individual physicians to install and use safety belts and further urges county societies to conduct safety belt campaigns.

The OSMA Council on Public Policy concurs in the value of medical leadership in the organization and conduct of such a community-wide campaign. Not only would the results be beneficial to public health, but the project also offers public relations potential.

A how-to-do-it kit has been prepared for use in this project by safety expert Lou Polk, State Department of Health, and is now being distributed to county medical society officers.

There are six basic steps to follow:

1. Select a general chairman and appoint an executive or steering committee.
2. Establish the project headquarters.
3. Arrange for purchase discount prices as well as installation sites.
4. Publicize the program with both mass media and organizational channels before a single belt is sold.
5. Formally "kick-off" the campaign with a breakfast or luncheon meeting and invite representatives from as many community organizations as possible.
6. Keep the campaign moving at a good pace and should it begin to drag—terminate it.

Organizations like the Junior Chamber of Commerce, Kiwanis and Lions have been conducting safety belt campaigns in a number of areas throughout the state. If the county medical societies feel they cannot steer such a project, they should encourage and support these organizations.

Any interested physician may obtain the how-to-do-it kit from the OSMA Executive Office, Box 9696, Oklahoma City □

ADMISSION BY
PHYSICIAN ONLY

A Distinctive Atmosphere
in A Setting of Elegance

Irene's
NURSING
HOME

THE HALLMARK OF
EXCELLENCE IN CHRONIC
and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City
CE 2-8091 CE 2-7853

AMA Scientific Program Outlined

The year 1962 has been a busy one for your American Medical Association. Every physician knows that through no wish of our own the A.M.A. was forced to devote much time and energy to non-scientific affairs during the year.

But while many members of the American Medical Association were busy with the winning of another round in the long fight to sustain free medicine in America, others were also busy sustaining the scientific work of the A.M.A. and pushing rapidly ahead with programs aimed at helping you in your practice.

One of the major scientific undertakings of the A.M.A. each year is the winter Clinical Meeting. The 1962 Clinical Meeting will be held November 25-28 at Los Angeles.

The members of the Council on Scientific Assembly, the committees in charge of plans and program and a host of other physicians have been working throughout the year to insure a well balanced and important scientific program for the 1962 meeting. They have succeeded admirably.

The physician in practice will find much of interest and benefit in the scientific papers, symposia, panels, films and exhibits in three and one-half days at the Shrine Auditorium at Los Angeles.

The program was published in its entirety in the October 27 issue of the Journal of the A.M.A. You will find strong emphasis on those health problems that confront virtually all of us in day-to-day practice —cancer, heart disease, virus diseases and many others.

The program on heart disease is a particularly strong one, including several of America's leading specialists. Papers on cancer will fill two complete units of the program and others on this theme will be presented in many of the specialty areas. Viral hepatitis, a growing disease that is confronting us more and more often in practice, will be given a thorough study.

Join your colleagues at Los Angeles in November. You will find much knowledge that will be of inestimable value to you in the years to come. □

NOW LEASING

Space in medical and dental building — one and one-half blocks from Midwest City Memorial Hospital.

Contact
Tom H. Murdoch, D.D.S.
312 South Midwest Blvd., Midwest City
PE 2-3111 or PE 2-7105

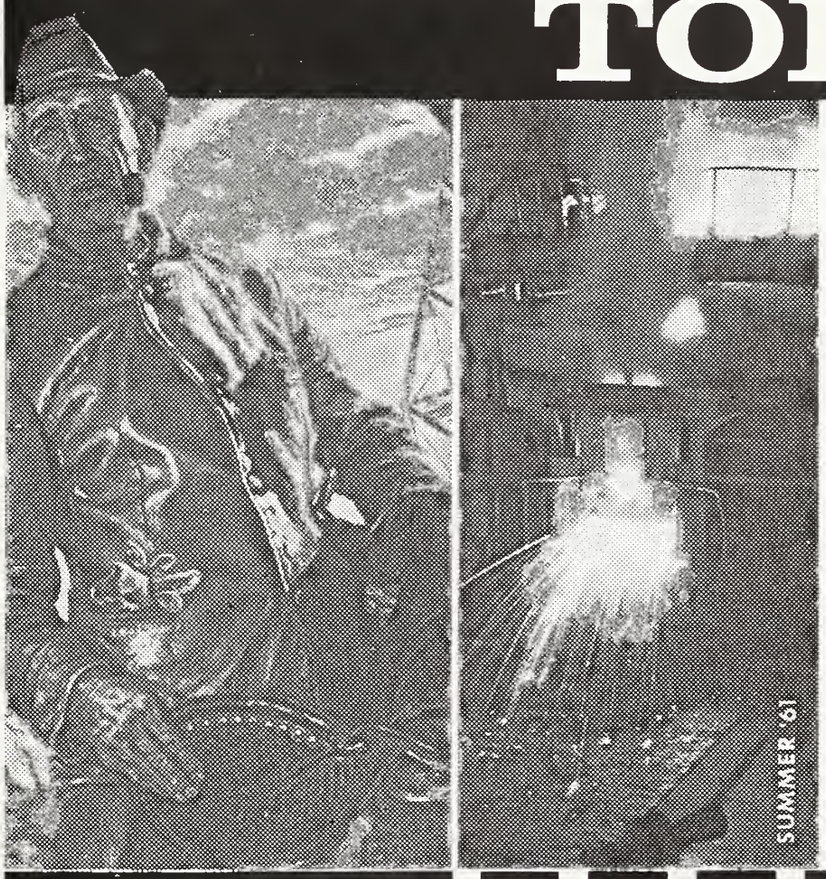
HEART PAGE

(Continued from Page 452)

tribute to the second sound in the aortic area. The splitting of the second sound is markedly accentuated with deep inspiration. In many normal children a third sound may be heard and is of no clinical consequence.

If after thorough auscultatory examination, doubt remains in the examiner's mind as to whether the murmur represents organic heart disease or not, an electrocardiogram and/or chest roentgenogram to determine cardiac enlargement may be helpful. It is well to remember, however, that if a prolonged PR interval is found in the electrocardiogram, it does not per se indicate rheumatic carditis. This electrocardiographic finding may occur in uncomplicated streptococcal infections, scarlet fever, and a variety of disease states unrelated to streptococcal infection. Five per cent of normal children have a consistently prolonged PR interval. □

OKLAHOMA TODAY



". . . The magazine is full of excellent things."
James Parton
Publisher
American Heritage

"We consider Oklahoma Today one of the finest publications we have seen."
Norman Seligman
National Research Bureau, Inc.

"I am another of the fans who think that Oklahoma Today is a fine magazine."
Inez Robb, Columnist
United Features Syndicate
New York, N.Y.

"I believe the folks who get the magazine appreciate it more than any other gift I've ever presented anyone."
Milt Phillips
The Seminole Producer
Seminole, Oklahoma

"What an attractive part of the U. S A. Oklahoma must be!"
Sir Berkeley Vincent
Great Britian

OKLAHOMA TODAY is a magazine with a purpose . . . to tell the story of Oklahoma . . . not only the Oklahoma of today, but the Oklahoma of yesterday, and of our hopes for tomorrow.

SUBSCRIBE NOW!

Oklahoma Today
State Capitol Station
Oklahoma City 5, Okla.
Circulation Department:

Please check:
☐ I am a new subscriber.
☐ One year
☐ Two years
☐ Three years

☐ Renew my present subscription for:
☐ One year
☐ Two years
☐ Three years

Please enter my subscription for **Oklahoma Today.**
My check or money order for $..... is enclosed.

My Name .....

Street or R.R. .....

City, Zone, State .....

One year $1.85. Two years $3.50. Three years $5.00. All countries except U.S. and its possessions add 40c per year.

LETTER

Dear Doctor:

By now I've thought quite a bit about what my preceptorship contributed to my medical training. It was something I could never have learned down here where thousands of lab tests are ordered, fancy tests run on urine, and specialists called in for consultation on plantar warts for a patient admitted under the Medicine service. I learned how varied are the problems a family physician must face, how confining are the hours of a doctor responsible for the health of so many patients, how disappointing practice can be when patients take their more serious ills to a specialist far away and only let their physician handle uncomplicated straight forward conditions.

I learned a little bit about the gravity of the responsibility a physician has the night a baby died with diarrhea. I realized for the first time that women who should be happy and contented may actually be so unable to cope with life that they depend on a physician to control their nerves. I guess I learned how much a patient tells his respected family physician trusting him with personal problems like possible homosexual tendencies in a son — and expecting their physician to help them.

The list goes on and on—I learned to think about medicine for the first time on a business basis as well as a professional basis and became aware of the complications that occur—like insurance, billing, offices, leaky roofs, salaries for personnel who are dependent on the physician for their living expenses.

I saw physicians behaving as community citizens — fulfilling all sorts of roles from Blue Cross-Blue Shield Board members to church board members to members of the administrative board of a hospital.

Needless to say, I've done a bit of introspection the past month. I believe the sum of my learning could be stated as a realistic approach to the practice of medicine, and I must add, I'm glad I had a physician as fine as you to introduce me to the realities.

Thanks for now, and I'm sure my thanks will multiply with the years.

Sincerely,

A Preceptee

Miscellaneous Advertisements

FOR SALE Profexray X-ray, 100 millimeter, adjustable table, bucky diaphragm and fluoroscope. Contact J. E. Hollis, M.D., 108 West Eighth Avenue, Bristow, Oklahoma.

WANTED: Internist, Opthalmologist, Ob-Gyn, Urologist, board qualified or certified for practice with group in Western Oklahoma. One month annual vacation. Progressive pay scale. Contact Arthur Grayson, M.D., Medical Director, Community Hospital-Clinic, Elk City, Oklahoma.

BOARD ELIGIBLE Orthopedic Surgeon desires Oklahoma practice opportunity (group or associate). Age 32, graduate of St. Louis University, presently training at Henry Ford Hospital, Detroit, Michigan. Contact John A. Lynch, M.D., 17505 Stoepel, Detroit 21, Michigan. Available May 15, 1963.

WOULD LIKE to share expense on tape recorded medical subscriptions of surgery, internal medicine and general practice. Contact Key B, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

PHYSICIAN, presently interning, desires Oklahoma location to establish private practice. Contact Earl B. Gehrt, M.D., Broadlawns Polk County Hospital, 18th and Hickman Road, Des Moines, Iowa.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

FOR SALE: Practically new examining table, treatment table, instrument cabinet, scales, stool and spot light. Contact T. B. Collum, M.D., 208 Lenox Drive, Grandview Heights, Muskogee, Oklahoma.

FOR SALE: 100x100 Profexray. Excellent condition with fluoroscopy tilt table, developer tank. Complete—$1,500. Contact Elton W. LeHew, M.D., or Phillips R. Fife, M D., Guthrie, Oklahoma.

FOR SALE: Pediatric practice in Ponca City, Oklahoma. Available immediately. Will introduce. Contact Tom D. Moore, M.D., 418 Community Building, Ponca City. Telephone ROgers 2-5611.

BOARD ELIGIBLE surgeon desires solo opportunity or group association; 32 years old; available July 1, 1963; contact Harvey B. Koch, M.D., 202 North Taylor Street, Apartment #1, Little Rock, Arkansas.

Fall always reawakens the responsibility syndrome in the work of our organization. We become acutely aware of our varying responsibilities to the Auxiliary, increasing our membership, helping our leadership, and constantly improving our program.

We hope the day is close when we can proudly announce that the wife of every doctor is an active member, not just by paying her dues and having her name in the yearbook, but active in the sense of participation. In the meantime, we do have, as we have mentioned in past articles, quite a problem with the potential member or the drop-out member.

We must constantly recognize the wide variance in age, interests and abilities of our members and members-to-be. Only in this way can we keep, at a county level, continuously increasing enthusiasm, which is reflected in turn in our state and national accomplishments.

Perhaps members should compile a *Book for Skeptics,* a year by year account of the outstanding contributions of our organization. An editorial in the *AMA News* lists a few: ". . . based on this year's report of 647 counties with one or more community service projects, include sponsorship of 95 science fairs, 148 programs for senior citizens, 249 medical career programs and 187 special meetings with community leaders on various health subjects. In addition to local service programs, the auxiliaries raised $244,172 for the nation's medical schools." Further, in this same editorial (you can also read excerpts in the September *Bulletin*) are the following words quoted from the Fort Worth *Press*, particularly applied to the work of the Auxiliary in the recent legislative procedures: "These women are dedicated to the profession of their husbands, to being helpful and useful in affairs that concern the medical profession. They are a powerful force . . . when you put all the auxiliaries together . . . in telling the story of the doctor, in helping share his problems, in fighting his battles."

Actually, our job is pretty clearly defined, so far as membership is concerned. If we are to continue being that "powerful force," if we are to be the organization that is helpful and useful in affairs that concern our busy husbands, then we will build up our membership, we will convince those non-members, or those inactive members with myriad excuses, right?

The present attempt of the Kennedy administration to influence voters in the forthcoming elections should once more call our attention to the relentless battle that lies ahead in medical legislation. Be sure that you are keeping your files, both personal and Legislative Committee, up to date. In this way, there will be no last minute preparation for education in your Auxiliary. One of the best recent articles is "What Private Health Insurance Now Offers," *U.S. News and World Report,* October 1, 1962. Each of us must constantly be reminded that to be acquainted with facts such as these on medical care, any phase, keeps us from being at the disadvantage of sputtering or hesitating or being diverted by presentation of untruths. In other words, let us maintain aplomb through pre-preparation and understanding of any situation involving medicine.

Back to the *Bulletin,* which provides more interesting articles for the well informed Auxiliary member than any other source, we know you will be interested in the announcement of the national security seminars being conducted around the country next year. One seminar is scheduled for Tulsa from February 18 to March 1, 1963, and we will provide more information as soon as it is received. "Must" reading includes the address by Dr. Larson: "The Catbird Seat." And do not overlook the stirring acceptance speech of Mrs. William G. Thuss, our new National President. Her speech ends, "All work is as seed sown; it grows and spreads, and sows itself anew."

OSMA JOURNAL / *the last word*

AMA President-Elect Edward R. Annis, M.D., will be in Tulsa on April 22nd to address a joint meeting of the medical and dental societies, presumably on his favorite subject, social security health care legislation. The next day he will journey to Oklahoma City for a Town Hall Meeting of physicians and their non-medical guests. Anticipated audience in Oklahoma City's Municipal Auditorium: 4,000 persons.

Henry H. Turner, M.D., Oklahoma City, will moderate a symposium on endocrinology at the Southern Medical Association meeting in Miami Beach this month, then will present a paper on Gonadal Dysgenesis before the Mexico Endocrine Society on November 23rd. He is Secretary-Treasurer of the American Endocrine Society.

OSMA Journal maintains top rating. At the Regional State Medical Journal Conference held November 3-4 in Denver, *The Journal* of the Oklahoma State Medical Association was rated by a typography expert as one of the nation's top five. No individual award was presented as was done last year when the OSMA took the top national honor.

Congressman Victor Wickersham, who has repeatedly assured Oklahoma physicians that he is opposed to social security health care financing, reported total contributions to his recent campaign of $5,690. Of this amount, $4,550 is directly traceable to organized labor, principal supporters of the legislation in question.

Opthalmologists have been contacted by the Federal Trade Commission and asked to voluntarily agree to the provisions of the Trade Practice Rules of the Optical Products Industry. The agreement indicates that the physician will comply with the rules of the commission related to fair trade practices, particularly in regard to dispensing optical products. The National Medical Foundation for Eye Care and the AMA objected to these rules. It is pointed out: (1) That physicians who do not dispense optical products are not covered by the rules; (2) That physicians who do dispense optical products may continue to do so regardless of voluntary compliance with the rules; and, (3) That the rules themselves are not law, and there is no penalty for refusing to sign the agreement to abide by such rules.

Fluoridated milk may ease the controversy over fluoridated water supplies. Louisiana State University study revealed that dental cavities in children were reduced 75 per cent in three years by use of fluoridated milk. Dairies are awaiting Federal approval to use the technique.

The chairman of the AMA's Board of Trustees, Hugh H. Hussey, M.D., has been named director of the American Medical Association's Division of Scientific Activities and armed with an annual budget of more than $2 million. Doctor Hussey is presently dean of Georgetown University School of Medicine. President Kennedy appointed him last year as a member of the Board of Regents of the National Library of Medicine.

The AMA Council on Scientific Assembly invites physicians to submit titles and brief abstracts of scientific papers they wish to deliver at the 1963 annual meeting of the association, which will be held in Atlantic City, June 16-20. The deadline is December 15, 1962, and interested physicians should contact George R. Meneely, M.D., secretary of the Council, AMA, 535 North Dearborn, Chicago 10, Illinois.

MEETINGS

Nov. 25-28	AMA Clinical Meeting, Los Angeles, California
Dec. 12	Postgraduate Course, O.U. Medical School, "Poisons in Children"
Feb. 4-5	Oklahoma Chapter, AAGP, Sheraton-Oklahoma, Oklahoma City
May 3-5	OSMA Annual Meeting, Mayo Hotel, Tulsa

The JOURNAL of the Oklahoma State Medical Association

DECEMBER 1962
Vol. 55/No. 12

EDITORIAL BOARD

C. B. DAWSON, M.D.
Editor-in-Chief

JOHN G. MATT, M.D.
Editor

ROY O. KELLY, JR., M.D.
Editor

BOARD OF CONTRIBUTING EDITORS

GEORGE M. BROWN, M.D.
RICHARD H. BURGTORF, M.D.
JAMES H. BUSHART, M.D.
R. R. HANNAS, M.D.
LEO LOWBEER, M.D.
THOMAS N. LYNN, M.D. (Heart Page)
MRS. JOSEPH J. MARIL (Auxiliary)
DAVID C. MOCK, M.D.
J. W. MURPHREE, M.D.
E. K. NORFLEET, M.D.
RICHARD W. PAYNE, M.D.
HENRY T. RUSSELL, M.D.
JOE L. SPANN, M.D.
EMIL F. STRATTON, M.D.

OFFICERS

J. HOYLE CARLOCK, M.D.
President

PETER E. RUSSO, M.D.
President-Elect

FRANCES P. NEWLIN, M.D.
Vice-President

MARK R. JOHNSON, M.D.
Secretary-Treasurer

STAFF

DON BLAIR
Business Manager

LOUISE MARTIN
Editorial Assistant

THE JOURNAL is the official publication of the Oklahoma State Medical Association, and is published monthly under the direction of the Council, 601 N.W. Expressway, P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Publication office (printer) 222 East Eufaula St., Norman, Okla. Subscription to *THE JOURNAL* is included in membership fees. Other subscriptions are $5.50 per year or $1.00 per copy with each request subject to approval of the Editorial Board. Copyright 1962, by the Oklahoma State Medical Association.

POSTMASTER: Send all change of address notices to P.O. Box 9696, Shartel Station, Oklahoma City, Okla. Second-class postage paid at Norman, Okla.

CONTENTS

editorial

Representation? A Note to Those Not Present . . . 473
Who Can Tell? 473
President's Page 475

scientific

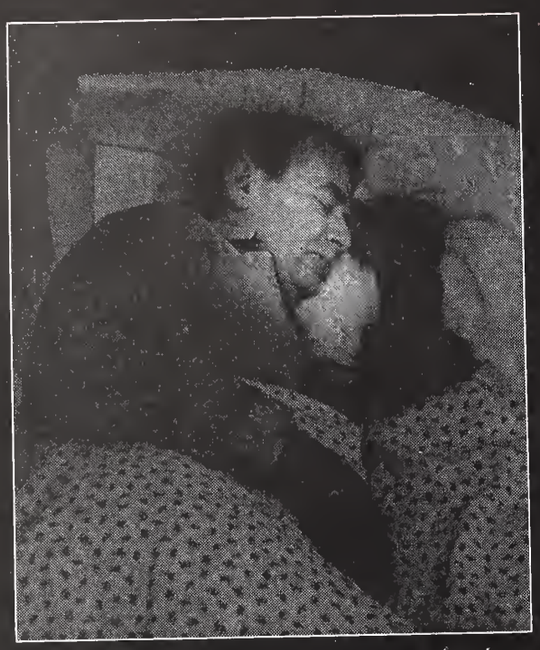
Infantile Diarrhea Due to Enteropathogenic Escherichia Coli, *James Earnest Mays, Jr., M.D.* 476
Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney, *Warren L. Felton, II, M.D. and Jess E. Miller, M.D.* 480
Use of A Liquid Meal in A Football Training Program, *Donald L. Cooper, M.D., Byron Bird, and Joseph Blair* 484
Heart Page, *William E. Jaques, M.D.* 487

medical center

Dean's Message 488
A Histochemical Study of Vitiligo, *James Garner, and Mark Allen Everett, M.D.* 489
Isolated Aneurysms of the Iliac Arteries, *J. A. Barney, M.D. and G. R. Williams, M.D.* 492
Abstracts 495

news

Counties Asked to Participate in PR, Legislative Projects 496
AMA Meets in Los Angeles 496
Committee Studies Insurance Trust for the Aged . . . 498
House of Delegates Fails to Achieve Quorum 498
Most Aged Persons Are Well Off 499
Grove Physician Practices 61 Years 500
Social Security Opposed by State Physicians 500
State GP's To Meet in February 501
Regional Postgraduate Courses Announced 501
Deaths 502
Book Reviews 502
Miscellaneous Advertisements 503
Index to Contents 504
Index to Advertisers l
Auxiliary li
The Last Word lii



Thanks to 135 tiny "doses" throughout the

*Trademark, Reg. U.S. Pat.Off. Copyright 1962, The Upjohn Company

Representation? A Note to Those Not Present

THERE ARE 141 physicians in the OSMA House of Delegates. County societies elect 100 of these and the rest are members of the Board of Trustees, which includes the general officers.

Delegates from counties are elected on a population basis, and trustees represent land area. Thus, a meeting of the group is comparable to a joint meeting of the two houses of Congress, plus the executive and judicial branches.

The House is the supreme policy-making voice of Oklahoma Medicine. Those honored to serve in it should possess a high degree of dedication to their responsibility. Defaulting this responsibility by failure to attend meetings is inexcusable.

Yet, at last May's annual meeting, less than 100 delegates were in attendance. A special called meeting on September 16th attracted only 73 and the premature departure of some of them made it necessary to adjourn the meeting before the agenda was completed. Another meeting on November 18th could not be convened since only 52 were present.

What a sad testimony to a democratic governmental system which physicians affectionately cherish and loudly defend! To be effective in meeting our external problems of growing importance and to govern ourselves as we wish to do, we must first lick the apathy within our own ranks. Empty chairs can neither discuss nor vote! □

Who Can Tell?

Roy Lester, M.D.
Headquarters
American Medical Association
Washington, D.C.

Dear Dr. Lester:

The following is a letter sent to Senator James Eastland, Chairman of the Senate Judiciary Committee:

"So much propagandized publicity has appeared lately concerning Thalidomide, drugs in general, Food and Drug Administration, new regulations, etc., that perhaps it would not be out of order to present an opinion from one who has worked in this field for many years. For a number of years I have been a Professor of Pharmacology in a School of Medicine. Those in this position teach the prospective doctors about the reactions of drugs and medicines, including what the drug does in the body, its good as well as undesirable effects, when it should and should not be used, etc.

"Thalidomide was being tested as a sedative or substitute for the barbiturates, and it had many promising characteristics for this purpose, for it appeared to be non-habit forming and not addicting. An overdose could not cause death. It had been subjected to approximately seven years of testing, evaluation and observation before being presented to the Food and Drug Administration. When it was presented, no one, including the Food and Drug Administration, knew of its horrible side effect involving unborn babies. Thousands of people have lost their lives since the advent of barbiturates by using them inappropriately. It was hoped that Thalidomide could replace the use of barbiturates.

"The testing was conducted in the same manner that has brought to us many life saving medicines. In order to reap the tremendous rewards in the development of new drugs which have saved literally thousands of lives, risks must be taken, and unfortunate reactions of this nature have occurred before, and undoubtedly will occur again. However, weighed against the overwhelming beneficial effects, the chance taken is worthwhile. It is similar to sending an astronaut into space. He might not return alive, but the possible benefits are worth the calculated risk.

"The inference has been made that the doctors cannot be trusted, and need someone in a government agency to tell them what medical compound can or cannot be used.

There is no reputable physician who would have prescribed the drug to a pregnant woman as soon as its undesirable effects were known. This drug could have been obtained only through the prescription of a physician. Doctors are prescribing hundreds of medical preparations that could be fatal if used incorrectly, but we rely on their good judgment and training to use them in the proper manner. Digitalis has saved hundreds of lives, yet if used in the wrong person or an improper dosage it can be disastrous. The same is true of insulin, penicillin, sulfas, cortisone, morphine, anesthetics, and many other 'life saving' drugs. I know of no drug, no matter how good or valuable, that is not potentially dangerous. Aspirin has a toll of several hundred lives each year; in fact, a glass of milk or an egg, as well as many other good foods, produce serious reactions in some people. It is not the use of a drug that makes it dangerous, but its improper use.

"Simply placing the handling of drugs under F.D.A. control would not necessarily prevent unfortunate results of the Thalidomide type unless the development and use of new preparations were stopped entirely. No thinking person would advocate this. I know Doctor Kelsey and many others in the F.D.A. office. I have always regarded them highly and I have given a number of talks to civic and other groups concerning the good work they have been doing. However, just because they are a government agency does not make them infallible or alone capable of judging the beneficial and undesirable characteristics of a medicinal compound.

"Although the personnel of the Food and Drug Administration are outstanding and of the highest type, they are also human beings. It would be unfortunate if any one group had the exclusive final say on such an important matter, whether it be the F.D.A, AMA, or the Podunk County Welfare Society. Any agency or group, whether of civil or government origin which becomes too strong and has the potential to dictate or be subjected to political domination, will become overbalanced and will not accomplish that for which it was intended.

"The inferences and implications that have been made point toward a serious indictment of the pharmaceutical industry, indicating that they are interested only in making money. Certainly they intend to make a profit, as do all businesses, and most individuals. However, the pharmaceutical industry also has men of high moral character and integrity. Furthermore, they realize full well that marketing an inferior or hazardous drug is poor business. I might add that Senator Kefauver's 'hand picked expert witnesses' certainly did not represent the consensus of scientists in this field.

"Considering the tremendous publicity released recently about a number of 'potentially dangerous' compounds, and coming immediately after the defeat of the Medicare Bill, one cannot help but wonder if this could be but an example of power politics, as great or greater, but more subtle, than that exerted against the steel industry for the purpose of bringing this country another step closer to government control and domination. However, in this regard I would like to commend you and your committee for the foresight and statesmanship you have shown.

"I might say that I have no connection, official or otherwise, with any government agency or industry. I represent no group or institution. I am concerned only that an injustice is being done, and that the fervor of emotion and politics may result in regulations that will stifle progress in medicine and hinder the development and use of new potential life saving drugs."

Sincerely,

ARTHUR A. HELLBAUM, Ph.D., M.D.
AAH/hp □

Christmas Message

I dearly love the words of Saint Paul, spoken at Corinth. They are presented to you here for a moment of reflection during this wonderful Christmas Season.

"Though I speak with the tongue of men and angels, and have not charity, I am become as sounding brass, or a tinkling cymbal.

And though I have the gift of prophecy, and understand all mysteries, and all knowledge; and though I have all faith, so that I could remove mountains, and have not charity, I am nothing.

And though I bestow all my goods to feed the poor, and though I give my body to be burned, and have not charity, it profiteth me nothing.

Charity suffereth long, and is kind; charity envieth not; charity vaunteth not itself, is not puffed up,

Doth not behave itself unseemly, seeketh not her own, is not easily provoked, thinketh no evil;

Rejoiceth not in iniquity, but rejoiceth in the truth;

Beareth all things, believeth all things, endureth all things.

Charity never faileth: but whether there be prophecies, they shall fail; whether there be tongues, they shall cease; whether there be knowledge, it shall vanish away.

For we know in part, and we prophesy in part.

But when that which is perfect is come, then that which is in part shall be done away.

When I was a child I spake as a child, I understood as a child, I thought as a child; but when I became a man, I put away childish things.

For now we see through a glass, darkly; but then face to face: now I know in part; but then shall I know even as also I am known.

And now abide faith, hope, charity, these three; but the greatest of these is charity."

May the spirit of Christmas, and our Creator, as well as the joy of the Holiday Season fill the hearts of you and your dear ones with love and happiness: and may the New Year find you achieving success and service that will be great and soul satisfying.

J. Hoyle Carlock, M.D.

OSMA JOURNAL/scientific

Infantile Diarrhea Due to Enteropathogenic Escherichia Coli*

JAMES EARNEST MAYS, JR., M.D.

Acute infantile diarrhea seen in the routine office practice may well be caused by enteropathogenic E. Coli as it is not always a hospital acquired infection.

INTRODUCTION

STUDIES of the relationship of Escherichia coli to human gastroenteritis began with the investigations in 1927 of Adams[1] in Germany. He reported the etiologic association of certain fermentative types of *E. coli* with diarrhea in infants. It was not until 1945, when Bray[2] demonstrated the relationship between a specific serotype and an outbreak of diarrheal disease, that significant attention was focused on these organisms as a pathogenic agent in diarrhea. During the past decade, certain serologic groups of *E. coli* have been recognized as having an important place in the etiology of infantile gastroenteritis.

Most studies of this problem have centered on enteropathogenic *E. coli* as a cause of epidemic gastroenteritis within a hospital environment, and the problem has been regarded primarily as a hospital-acquired infection. Because of the apparent increasing number of cases of gastroenteritis due to enteropathogenic types of *E. coli* admitted to the Children's Memorial Hospital from various portions of the State, in addition to hospital outbreaks of the infection, a study was undertaken to determine the incidence of diarrhea due to enteropathogenic *E. coli*, during the three months period from October to December, 1958. All patients with diarrhea admitted to the Infectious Disease Ward of Children's Memorial Hospital had appropriate bacteriological studies carried out to detect enteropathogenic *E. coli* as well as other pathogens. It is the purpose of this paper to present the findings in this study.

MATERIALS AND METHODS

The patients were referred from widely separated areas of the state and no common infecting source could be identified. Both private and service patients were included in the study, and both sexes were represented in approximately equal numbers. Stool cultures were obtained by the following method: rectal specimens were obtained on two dry sterile swabs. One swab was then placed in a test tube containing sterile tetrathionate broth. This provided a medium for sub-cul-

*From the Department of Pediatrics and The Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Okla. This study was conducted in part during a traineeship (AT-415) from the National Institute of Arthritis and Metabolic Diseases, Department of Health, Education, and Welfare.

ture on blood agar, Eosin Methylene Blue and Shigella-Salmonella agar. The second swab was used to inoculate a blood agar plate directly. In all cases, cultures were planted immediately. The culture on Eosin Methylene Blue and on Shigella-Salmonella agar was observed for any signs of non-lactose fermenting colonies. After 24 and 48 hours of incubation at 37° C. any such colonies were typed against *Shigella* and *Salmonella* antisera for definite identification. After 24 hours of incubation at 37° C., seven colonies of *E. coli* from the blood agar plate inoculated by the dry swab were mixed with enteropathogenic *E. coli* antisera and observed for agglutination. Antiserum at the time of the study was available for the following serotypes: 0111:B4, 026:B6, 0B55:B5, and 0127:B8.

RESULTS

During this three months period, 58 patients between the ages of seven days and 19 months with diarrhea were admitted to the Infectious Disease Unit of Children's Memorial Hospital. Of these 58 patients, 26 or 44.8 per cent had positive cultures for enteropathogenic *E. coli*, and negative cultures for *Shigella* and *Salmonella*. Five of the 26 patients were less than one month of age, 13 patients were between one and six months of age, and four were between seven and 12 months of age. Thus, 18 of the 26 patients were six months of age or younger, and 22 of the 26 patients were less than 12 months of age.

Four strains of enteropathogenic *E. coli* were isolated, 0111:B4, 026:B6, 0B55:B5, and 0127:B8. From six of the 26 patients, more than one serotype of enteropothogenic *E. coli* was isolated. All five of the patients one month of age or younger harbored type 0111:B4. The same serotype was recovered in 10 of 13 patients, one to six months of age, and in two of four patients between seven and 12 months of age. Overall, type 0111:B4 was recovered from 17 of 26 of the patients, 12 months of age or younger.

The patients were classified from mild to severe on the basis of their clinical manifestations. Those classified in the severe category had mild to moderately severe electrolyte imbalances, but all did not require intravenous fluid therapy. Patients classified in the moderate category usually were admitted as failure to thrive with chronic diarrhea and malnutrition without obvious dehydration. Eighteen patients were classified as severely ill, and seven patients were moderately ill. Only one patient was considered to be mildly ill. As a general rule, the younger the patient, the more severe the illness. The severity was also greater in patients with other debilitating conditions (See table 1).

Table 1.
CLINICAL SEVERITY BY AGE OF PATIENT

Age	No. Pts.	Severe	Moderate	Mild
1 mo.	5	3	2	0
1 to 6 mo.	13	9	4	0
7 to 12 mo.	4	4	0	0
13 to 25 mo.	4	2	1	1
TOTAL	26	18	7	1

In relating serotype with severity of the disease, 13 of the 18 cases in the severe and six of the seven cases in the moderate categories were due to 0111:B4 alone or in combination with another type. Thus, type 0111:B4 alone or in combination with another serotype accounted for the illness in 19 of the 26 subjects. The distribution of other types is shown in table 2. There was one death, an infant who had endocardial fibroelastosis and cardiac failure.

Nineteen strains of enteropathogenic *E. coli* recovered from 16 patients, 14 of which were serotype 0111:B4, were subjected to antimicrobial susceptibility studies using the disc method. All 14 strains of serotype 0111:B4 were susceptible to neomycin, polymyxin, dihydrostreptomycin, nitrofurantoin, and 11 to tetracycline. The other five strains consisted of one strain of serotype 0B55:B5, two strains of serotype 026:B6, and two strains of serotype 0127:B8. Of these, all

---

Since graduating from the University of Tennessee School of Medicine in 1956, James Ernest Mays, Jr., M.D., has been certified by the American Board of Pediatrics.

In addition to his private practice in Oklahoma City, Doctor Mays is an instructor in the Department of Pediatrics at the University of Oklahoma School of Medicine. He is a member of the Oklahoma County Pediatric Society.

five were susceptible to chloramphenicol, polymyxin, and nitrofurantoin. Susceptibility studies against kanamycin could not be performed because of the unavailability of standard for this drug at the time of the study.

Three drugs, neomycin, chloramphenicol, and kanamycin, in various treatment regimes were utilized in this study. Neomycin was given in two dosage regimes: (a) 150 mg/kg/day orally for two days followed by 100 mg/kg/day orally for five additional days; and (b) 100 mg/kg/day orally for seven consecutive days. Chloramphenicol was also used in two dosage schedules, the first being 100 mg/kg/day orally for seven days and the second 50 mg/kg/day orally for seven days. Four patients were treated with kanamycin, three patients receiving 50 mg/kg/day intramuscularly for seven days, and the other 15 mg/kg/day intramuscularly for seven days.

Of the 26 patients, two had a spontaneous clinical and bacterial reversion without any specific therapy. These two cases were due to serotype 026:B6 and 0127:B8 (table 3). Nine patients were given adequate doses of chloramphenicol and a satisfactory response was obtained in only two cases. In these two cases, illness was due to a combined infection with serotype 026:B6 and 0127:B8. Five cases due to serotype 0111:B4 alone, one case due to 0111:B4 and 026:B6, and one case of combined infection due to 0B55:B5 and 026:B6 did not respond to chloramphenicol. Four patients were treated with kanamycin, a satisfactory response being achieved only in one case due to serotype 0111:B4. The other two cases caused by 0111:B4 and one by 0127:B8 did not respond. Twelve patients were treated initially with neomycin and all had satisfactory responses, both clinically and bacteriologically. The therapeutic response in these cases was independent of the infecting serotype. The seven patients initially treated unsuccessfully with chloramphenicol and the three who received kanamycin subsequently were given neomycin with prompt and satisfactory responses. A known recurrence occurred only once and this was in a patient whose reinfection outside the hospital was considered quite likely.

Table 2.
RELATIONSHIP OF CLINICAL SEVERITY TO SEROTYPE

Serotype	CLINICAL SEVERITY: Severe	Moderate	Mild	Total
0111:B4	11	5		16
0111:B4 and others (026:B6 and 0127:B8)	2	1		3
0B55:B5 and 026:B6	1			1
026:B6	1	1		2
026:B6 and 0127:B8	1		1	2
0127:B8	2			2
TOTAL	18	7	1	26

DISCUSSION

Because of the increasing number of cases of diarrhea in infants in which the usual enteric bacterial pathogens could not be recovered, an effort was made to determine if enteropathogenic *E. coli* was responsible etiologically. As has been the experience of others[3, 4, 5] a significant percentage of such cases was found to be due to various serotypes of enteropathogenic *E. coli.* From a clinical standpoint, the manifestations of these infants with enteropathogenic *E. coli* enteritis did not differ sufficiently from the clinical picture of enteritis due to other pathogens to permit an etiologic diagnosis on the basis of clinical observations alone. The wide range of clinical manifestations exhibited by the patients was noteworthy. Some of the infants had a very severe fulminating illness accompanied by dehydration, acidosis, and other homeostatic derangements. Others exhibited mild illnesses with little or no systemic disturbance. Several patients admitted because of growth failure and persistent diarrhea were found to be infected with enteropathogenic *E. coli.* Subclinical infections with this organism are also well known.

There was no particular characteristic of the stools of these patients to permit a definitive or presumptive diagnosis. Possibly, the presence of gross blood in the stools was less common in these patients than in those with bacillary dysentery.

It should be noted that the development of fluorescent antibody techniques in the Infectious Disease Laboratory at the Children's Memorial Hospital has permitted much more rapid identification of enteropathogenic *E.*

Table 3.
RESPONSE OF ENTEROPATHOGENIC *E. COLI* INFECTIONS TO ANTIMICROBIAL AGENTS

SEROTYPE	No. of Pts.	NO. PTS. RESPONDING/ NO. PTS. TREATED			SPONTANEOUS CURE
		Chloramphenicol*	Neomycin	Kanamycin*	
0111:B4	16	0/5	15/15	1/3	
0111:B4 and (others)	3	0/1	3/3		
0B55:B5	1	0/1	1/1		
026:B6					
026:B6	2		1/1		1
026:B6	2	2/2			
0127:B8					
0127:B8	2		1/1	0/1	1
TOTAL	26	2/9	21/21	1/4	2

*Those patients failing to respond to chloramphenicol and kanamycin were subsequently treated with neomycin with clinical and bacteriological cures.

coli in fecal specimens. This technique was not available during the time of the study, but it can be recommended as a means of making a more rapid diagnosis of infections due to enteropathogenic *E. coli.*

A great many drugs have been used in the treatment of this particular infection. These have included such drugs as sulfonamides, chloramphenicol, neomycin, polymyxin B, nitrofurantoins, kanamycin, and the tetracyclines. In this study, neomycin administered by mouth in a dose of 150 mg/kg/day for two days followed by 100 mg/kg/day for five additional days proved to be uniformly satisfactory. On this regime there were no therapeutic failures. As there is very little absorption of neomycin from the gastrointestinal tract, doses of the size used in this study are associated with no particular danger. No evidence of malabsorbtive errors which have been reported with prolonged oral neomycin therapy was observed in this series. As described previously, chloramphenicol and kanamycin were rarely successful therapeutically.

Since the completion of this study, many of the strains of enteropathogenic *E. coli* isolated from patients with gastroenteritis at the Children's Memorial Hospital have been found to be resistant to neomycin as well as to other antibacterial agents. This change has occurred gradually. The majority of such strains are susceptible in vitro to Colistin and this agent has been successful clinically in the treatment of many of these cases.[6]

Although there was only one fatality in the study group, *E. coli* gastroenteritis can be a very lethal disease, mortality rates as high as 50 per cent having been described. Since this study many patients, particularly those with an underlying disorder, have been observed in whom the *E. coli* gastroenteritis was the primary, or an important contributing cause of death.

SUMMARY

During a three months period, 58 patients with gastroenteritis admitted to a hospital ward were studied for evidence of infection with enteropathogenic *E. coli.* Twenty-six or 45 per cent of the patients had positive cultures for pathogenic serotypes of *E. coli.* These patients were admitted from widely varying geographical areas and in no instance was cross infection an etiologic factor. The predominant serotype was 0111:B4. Neither the clinical manifestations nor the character of the stools differed significantly from those of gastroenteritis due to other causes. In this group of patients, neomycin administered orally for seven days proved to be an effective method of treatment. The problem of development of neomycin-resistant strains of enteropathogenic *E. coli* is discussed.

Diarrhea due to enteropathogenic *E. coli* is a relatively common cause of sporadic infantile gastroenteritis and should not be regarded as solely a hospital-acquired infection. It is recommended that all infants with gastroenteritis be studied by appropriate bacteriologic techniques designed to detect the presence of enteropathogenic serotypes of *E. coli.* □

BIBLIOGRAPHY

1. Adams, A.: Dyspepsiekoli. Zur Frage der bakteriellen Aetiologie der sogenannten alimentaren Intoxikation. Jahrb. Kinderh., 116: 8, 1927.

2. Bray, J.: Isolation of Antigenically Homogeneous Strains of Bact. coli neopolitanum from Summer Diarrhea of Infants. J. Path. & Bact., 57: 239, 1945.

3. Wheeler, W. E. and Wainerman, B.: The Treatment and Prevention of Epidemic Infantile Diarrhea due to E. coli 0-111 by the Use of Chloramphenicol and Neomycin. Pediat. 14: 357, 1954.

4. Stulberg, C. S., Zuelzer, W. W., Nolke, A. C., and Thompson, A. L.: Escherichia Coli 0127:B8, A Pathogenic Strain Causing Infantile Diarrhea. AMA J. Dis. Child. 90: 125, 1955.

5. Herweg, J. G., Middelkamp, J. N., and Thornton, H. K.: Escherichia Coli Diarrhea. J. Pediat. 49: 629, 1956.

6. Riley, H. D., Jr., Flux, G. M., and Bracken, E. C.: Laboratory and Clinical Evaluation of Colistin in Infants and Children. In press.

301 N.W. 12th St., Oklahoma City, Oklahoma

Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney

WARREN L. FELTON II, M.D.
JESS E. MILLER, M.D.

Abdominal aortic aneurysm and horseshoe kidney present a rare combination requiring special technical and diagnostic considerations for its successful surgical management.

THE ASSOCIATION of abdominal aortic aneurysm and overlying horseshoe kidney is uncommon. In the literature there are only three reports of this renal anomaly found during surgical exploration of an abdominal aortic aneurysm.[1, 4, 6] In one series of 804 associated operations done in conjunction with 931 abdominal aortic resections for aneurysm no instance of horseshoe kidney was noted.[3]

The incidence of horseshoe kidney is recorded as 1:644 in a large autopsy series[5] and 1:284 in a series of excretory urographic examinations.[2] It is likely that this anomaly will be encountered more frequently as a complicating factor with the increasing incidence of resection for abdominal aortic aneurysm. Some of the special considerations involved in this combination of findings are illustrated by the following case report.

CASE REPORT

E.H.G., a 77-year-old male, first noted a painless midabdominal mass ten days before admission to St. Anthony's Hospital, Oklahoma City, Oklahoma, on 8/31/62. He was essentially asymptomatic. Hypertension ranging around 200/100 mm.Hg. had been noted for several years. Past surgery included a transurethral resection of the prostate in 1947 and an inguinal herniorrhaphy in 1961.

Physical examination revealed a well nourished, vigorous appearing elderly male. The blood pressure was 190/90 mm.Hg. and the pulse 60/min. The heart and lungs were normal. There was a 15 cm. diameter pulsatile, non-tender, abdominal mass located slightly to the right of the midline at the level of the umbilicus. The peripheral pulses were normal.

Hemogram and urinalysis were normal, as were the fasting blood sugar and blood urea nitrogen. An electrocardiogram revealed a sinus bradycardia and first degree A-V heart block.

X-ray examinations of the chest, gallbladder and gastro-intestinal tract were essentially normal. Abdominal roentgenograms revealed calcification in the abdominal mass compatible with arteriosclerotic aneurysm.

Because of the apparent recent enlargement of the aneurysm surgical resection was felt indicated despite the age of the patient. On 9/4/62 exploration was done through a long vertical midline incision. The aneurysm was found to originate below the usual origin of the renal arteries and extend to the bifurcation with the thick isthmus of a horseshoe kidney overlying the main portion

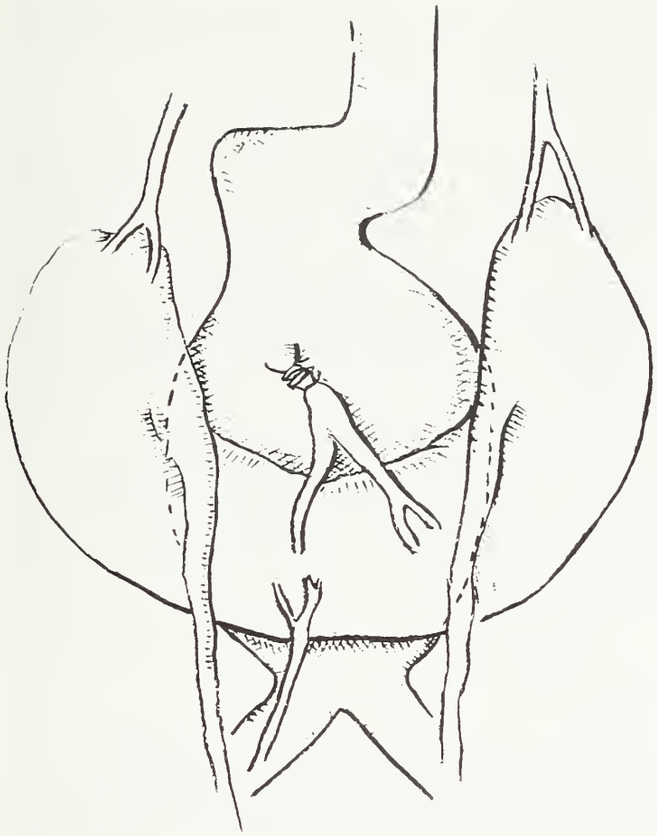


Figure 1. Diagrammatic illustration of the operative findings. The renal arteries entered the kidneys bilaterally at the upper poles. The large occluded vessel entering the isthmus was ligated and divided. The pelves and ureters lay anterior to the renal mass without evidence of obstruction.

of the aneurysm (figure 1). Two accessory arteries to the isthmus were noted. The larger arose from the aneurysm and was occluded. It was ligated and divided. The smaller artery arising from the right iliac was left intact. Because of the possibility of accessory arterial supply to the kidneys from the portion of the aorta involved in the aneurysm, aortography was done which showed bilateral arteries entering the kidneys from above the aneurysm (figures 2 and 3). This was confirmed by palpation. The isthmus was divided and the ends closed with mattress sutures. Resection of the aneurysm was then carried out and the aorta replaced with a woven Teflon arterial graft (figure 4). The rather long operative procedure was tolerated well with no period of hypotension.

Recovery from the operative procedure was not remarkable, but the post-operative period was characterized by a rather bizarre picture of renal insufficiency. In the face of a daily urinary output of 1,125 cc. to 2,900 cc. (depending on intake) the BUN rose to 77 mg. per cent on the eighth post-operative day at which time the serum potassium was normal. As the BUN fell toward normal the serum potassium rose as high as 7.0 m.e.q./l. at one time before falling to normal. Urine specific gravity varied from 1.006 to 1.012. Treatment included methylprednisolone, hydrochlorothiozide, spironolactone and cation exchange resins. The rental insufficiency was felt to be due partly to some degree of preexisting chronic renal disease aggravated by surgical trauma. He was eating well and essentially asymptomatic at the time of discharge on 10/10/62, and was reported doing well at home ten weeks post-operatively.

DISCUSSION

Anomalous vascular supply is common in horseshoe kidneys[2] with arteries which may be multiple arising from various levels of the abdominal aorta, the mesenteric arteries or the iliac arteries. Anomalous vessels to the isthmus are particularly frequent. It is this feature which presents a potential hazard in the resection of an associated aneurysm. It is obvious that the arterial supply to the kidneys must be demonstrated either by direct exposure, contrast radiography, or both so that it will not be jeopardized by resection of the aneurysm. In the case described by Julian[1] the arterial supply to the kidneys consisted of multiple branches arising from that portion of the aorta involved in the aneurysm, therefore the aneurysm was not resected. The diagnosis of horseshoe

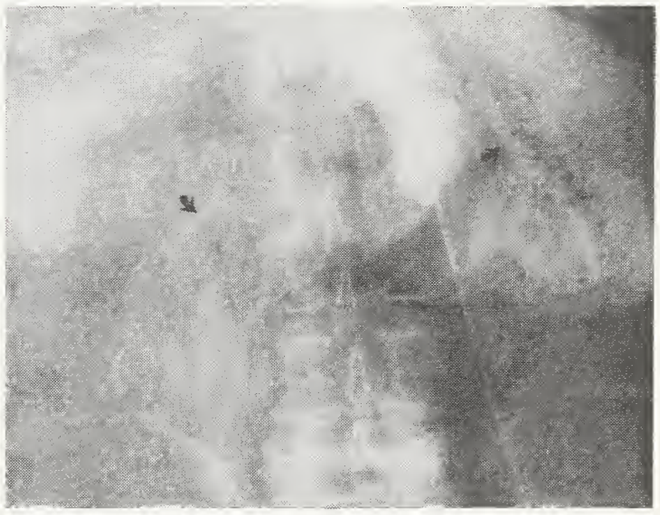


Figure 2. Operative aortogram showing two renal arteries (arrows) entering the kidneys and arising above the level of the aneurysm which does not fill with contrast medium.

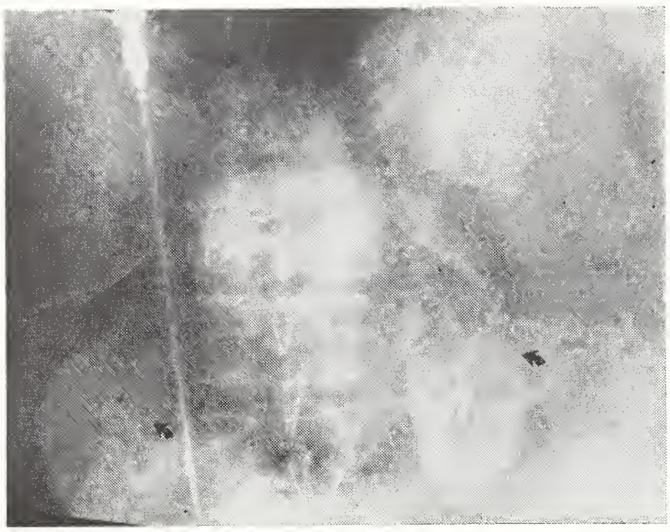


Figure 3. Later aortographic view showing bilateral nephrogram (arrows). The isthmus does not visualize.

kidney was not made on the basis of preoperative excretory urograms. In the case of Phelan *et al*[4] the diagnosis of horseshoe kidney was suspected on the basis of preoperative urograms. They found no accessory vascular supply and a narrow isthmus which permitted resection of the aneurysm and placement of an arterial homograft without division of the horseshoe kidney. Likewise in the case reported by Szilogyi[6] the renal arteries were evidently normal as the isthmus of the horseshoe kidney was divided and the aneurysm resected.

In the present case the large vessel to the isthmus was occluded by clot within the aneurysm and therefore could be sacrificed. Demonstration of the blood supply was done both by operative aortography and direct palpation. The width and thickness of the isthmus required its division to permit dissection and resection of the underlying aneurysm.

Interference with urinary drainage which may be related to the abnormal position of the pelves and ureters with horseshoe kidney did not appear to be present in any of these cases.

Preoperative aortography is generally considered an unnecessary risk in the diagnosis of abdominal aortic aneurysm. The diagnosis is usually made by palpation and standard abdominal x-ray examinations. The factors governing resectability of the aneurysm can be determined best by exploration and the aortographic findings may be misleading.

Pre-operative urograms should be helpful in determining the presence of this rare

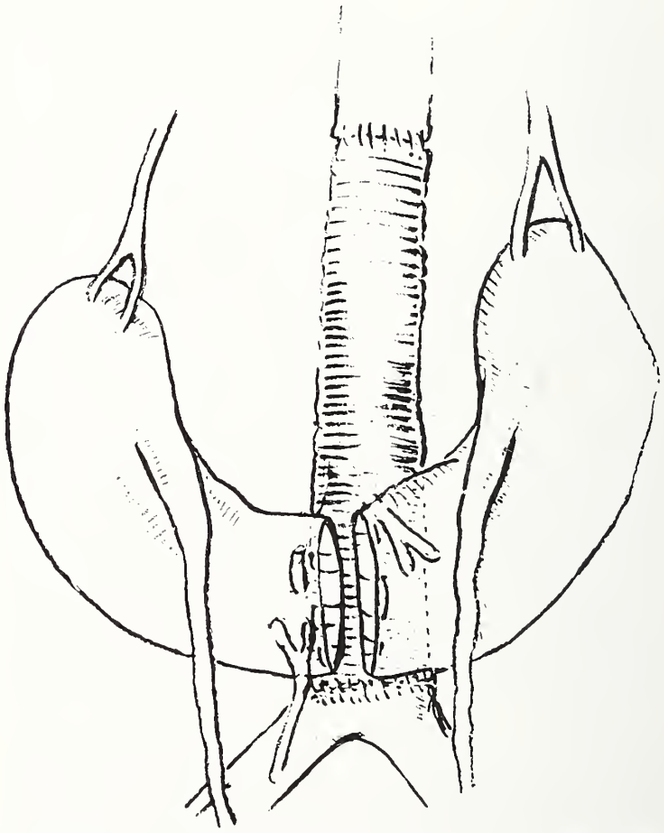


Figure 4. Diagrammatic illustration showing the horseshoe kidney divided, the aneurysm resected and a Teflon graft inserted.

Jess E. Miller, M.D., graduated from the University of Oklahoma School of Medicine in 1947, where he is now Assistant Professor of Urology. He has been certified by the American Board of Urology and holds memberships in the South Central Section of the American Urological Society, the Oklahoma City Urological Society and the Oklahoma Urological Society.

A 1949 graduate of Washington University School of Medicine, Warren L. Felton II, M.D., has been certified by the American Board of Surgery and the Board of Thoracic Surgery. In addition to his private practice, he is Assistant Professor of Surgery at the University of Oklahoma School of Medicine.

Doctor Felton is a Fellow in the American College of Surgeons, a member of the Southwestern Surgical Congress, the Oklahoma Surgical Association and the American Thoracic Society.

combination, however in one case cited above[1] the diagnosis was not made pre-operatively on this basis. Should the diagnosis of horseshoe kidney be made prior to exploration of an aneurysm then aortography, preferably by catheterization through the brachial artery, should be done to delineate the arterial supply to the kidneys.

The most important feature appears to be the realization that the vascular supply to the horseshoe kidney may be abnormal, and that its location must be determined by direct inspection or angiographic studies before resection of an associated aortic aneurysm. There appears to be no particular hazard in division of the isthmus of the horseshoe kidney, if necessary, in order to resect the aneurysm.

SUMMARY

A case of abdominal aortic aneurysm associated with horseshoe kidney is presented in which the isthmus of the horseshoe kidney was divided to permit resection of the aneurysm and prosthetic graft replacement of the aorta.

Diagnostic and technical considerations in this rare combination are presented. The major problem is related to the frequently abnormal vascular supply to horseshoe kidneys which must be carefully delineated by direct vision or contrast radiographic examination prior to resection of the associated aneurysm.

We should like to express our appreciation to William S. Myers, M.D., and Meredith M. Appleton, M.D., for their valuable help in the post-operative management of this patient. □

REFERENCES

1. Julian, O. C.: Diagnosis of Arterial Diseases. S. Clin. N. Amer. 36: 177-191, 1956 (Febr.).

2. Lowsley, O. S.: Surgery of the Horseshoe Kidney. J. Urol. 67: 565-578, 1952.

3. Ochsner, J. L.; Cooley, D. A. and DeBakey, M. E.: Associated Intra-abdominal Lesions Encountered During Resection of Aortic Aneurysms. Surgical Considerations. Dis. Colon and Rectum 3: 485-490, 1960.

4. Phelan, J. T.; Bernatz, P. E. and DeWeerd, J. H.: Abdominal Aortic Aneurysm Associated with a Horseshoe Kidney: Report of Case. Proc. Staff Meet. Mayo Clin. 32: 77-81, 1957.

5. Rolnick, H. C.: The Practice of Urology, Philadelphia, J. B. Lippencott Comp., 1949, Vol. 2, 636.

6. Szilagyi, E. D.; Smith, R. F. and Whitcomb, J. G.: The Kidneys in Surgery of the Abdominal Aorta. A.M.A. Arch. Surg. 79: 252-268, 1959.

Warren L. Felton II, M.D.
1200 North Walker, Oklahoma City, Oklahoma

Let's keep investing in the future of medicine

AMA-ERF
NEEDS YOUR FULL
SUPPORT

Doctors contributions should be sent to:

MRS. VIRGIL RAY FORESTER
2336 BELLEVIEW
OKLAHOMA CITY, OKLAHOMA

Use of A Liquid Meal in A Football Training Program

DONALD L. COOPER, M.D.*
BYRON BIRD*
JOSEPH BLAIR*

THE QUESTION of what to feed athletes is probably as old as sports. In a recent article, Bullen, *et al*, comment, "For centuries trainers and coaches have advocated special dietary schemes, stemming from older traditions and superstitions, and based on the belief that the ingestion of particular foods would augment the physical capacity or efficiency of the performer."[1]

To some extent such beliefs are still part of the athletic scene. College wrestlers and boxers, for example, frequently resort to crash diets in an attempt to qualify for a lower weight classification, even though they may sacrifice strength and stamina as a result. So-called "health foods" are commonly used by trackmen and swimmers in the mistaken belief that one or two "wonder" ingredients will enable the athlete to perform beyond his normal capability. Even when a team training table is maintained, there is a tendency to follow tradition rather than modern nutritional knowledge in arranging menus and feeding hours.

*Donald L. Cooper, M.D., is director of the Student Health Service, Byron Bird is football trainer and, Joseph Blair is manager of the Residence Halls Food Service at Oklahoma State University, Stillwater, Oklahoma.

Although relatively little investigation has been done on the special nutritional problems of athletes, the best available evidence today indicates that the athlete performs best on a balanced diet that includes a high carbohydrate content for quick energy, protein for growth and repair of tissue, ample supplies of vitamins and minerals, and moderate-to-low fat content.[1] In terms of daily caloric requirements, of course, the athlete's needs are considerably higher than those of the average person. In a study of the actual eating habits of athletes at one college, Mays and Scoular calculated that the average football player (mean of 72 inches in height and 198 pounds in weight) consumed 4,600 calories a day during the competitive season and 5,030 calories a day during the preseason training period.[2]

The problem of providing the athlete with a plentiful, well-balanced diet is complicated by the emotional tension that often accompanies competition. Several years ago Rose and Fuenning, suspecting that vomiting and sluggishness noted in certain football players could be traced to pregame tension, conducted barium x-ray studies on four volunteers who ate the customary big meal four hours before playing a game. Their films, when compared with those of normal young males in non-stress situations, indicated that the football players required from two to four hours longer than usual to digest their food. The authors stated: "We do not believe that these cases represent physiological variations

but rather examples of reduced gastrointestinal motility secondary to pregame emotional tension. The net result was that these players were simultaneously playing football and digesting a meal."[3]

As an outgrowth of this study, the University of Nebraska football team tested a revised pregame feeding schedule throughout the 1960 season. Instead of the usual 1,858-calorie solid breakfast, each player was given a light breakfast of toast, honey and peaches at 9 a.m. the morning of an afternoon game. At 10:30 each player drank one or two glasses of a liquid food which was the equivalent of a nutritionally complete meal. X-rays on volunteers showed that the liquid food passed through the stomach in less than two hours, Rose, *et al*, reported. "It did not differ from the conventional solid meal with respect to subsequent hunger, diarrhea, or weight changes, but in those who took it dryness of the mouth was less frequent during the game, strength and endurance seemed to be improved, and both vomiting and muscular cramps were elimiated."[4]

Here at Oklahoma State University we paid particular notice to Doctor Rose's findings because our football players had had their share of gastrointestinal troubles. About one-fifth of the squad voluntarily skipped breakfast the morning of a game because they had learned how uncomfortable it was to play with undigested food still in the stomach. During preseason practice, when the squad worked out twice a day in summer heat, it was common for eight to 12 boys a day to suffer from dry heaves, vomiting or similar complaints.

During the 1961 season we conducted our own experiment with a liquid food product called Nutrament,® dietary for complete nutritional support.* It comes ready-mixed in chocolate or vanilla flavors. Each 12½ fluid ounce can provides 400 calories—20 grams of protein, 50 grams of carbohydrates and 13.3 grams of fat—as well as adequate amounts of essential vitamins and minerals. We used the product during preseason training and as a pregame supplement during the regular football season, and we also found it helpful in weight control. We did not attempt to set up any control groups, nor did we conduct barium studies or do any special laboratory work on the players. Nevertheless, our clinical impressions were so favorable that we are continuing to use the product this fall and have begun to use it in other sports as well.

*Edward Dalton Co. division of Mead Johnson & Company.

PROCEDURE

During two weeks of "two-a-day" preseason practice sessions, each member of the 55-man squad received a can of Nutrament at 7 a.m. as a substitute for the usual breakfast. Each member of the coaching staff also took it, to serve as an example to the boys. The team practiced from eight to ten, ate a regular lunch at 11:30, practiced again from 3:30 to about 5:30, and had a regular dinner at 6:30.

Throughout the ten-game varsity season, each player was allowed a light breakfast the morning of the game. At about 10:30, during taping, each player got one or two cans of the liquid dietary. No one ate again until the big dinner after the game.

RESULTS

Nausea and vomiting. The greatest advantage of the new feeding routine might be called "mechanical"—it allowed the player to enter competition with an empty stomach. The first day of preseason practice with the liquid dietary regimen, there were a few reports of nausea developing during scrimmage, but these were attributed to the state of conditioning of the players. Through the remainder of the training period, only two players had any stomach trouble, and one of these was later shown to have a duodenal ulcer and irritable bulb. There were no complaints of nausea, vomiting or severe stomach cramps during the ten games of the regular season. In short, we felt we had virtually eliminated the digestive problems that had bothered us in previous years.

Energy and stamina. Before the experiment began several of the coaches expressed fears that players' stamina would be weakened by the curtailment of the traditional pregame meal. These same coaches agreed later in the season that their fears had been groundless. Indirectly, use of the liquid meal probably contributed to a more sustained effort. Players who were accustomed to eat-

ing the big pregame breakfast reported that they felt less sluggish, particularly early in the game, after switching to the new feeding schedule. On the other hand, several players who had once skipped breakfast the morning of a game felt better when they took the liquid dietary.

Weight control. In preseason practice four players were allowed to take Nutrament in place of all three meals in an attempt to take off excess pounds. Along with it they ate a tossed salad for bulk and drank two glasses of grape punch. Each of them took off between 15 and 20 pounds under this schedule, and each was close to his ideal weight by the time the season started.

We also found that Nutrament could be given as a supplement to boys who for one reason or another wanted to gain weight. The usual procedure when a player needed to put on several pounds was to give him a can of the liquid in addition to his regular meals. One player, who reported to the training camp 20 pounds underweight because of a recent kidney infection, gained 15 of those pounds back within two weeks; he took three or four cans of the product daily in addition to his regular meals.

Player acceptance. When plans for the new feeding routine were first announced, a few players complained at having to give up a solid meal. But as the season wore on, the early dissenters saw the value of the program and there were no new objections. All the players and coaches liked the taste of the product, and there was general agreement that it satisfied hunger and left no aftertaste. Significantly, the veterans on the club were the most enthusiastic supporters of the new regimen. These were the men who know from experience how unpleasant it was to play a game with food still in the gastrointestinal tract.

COMMENT

Because of favorable experience with the liquid meal last season, we are sticking with it again this fall. We plan to try it out in other sports, notably basketball and baseball and are also using it among students in the University Hospital who need to gain weight or who have difficulty eating solid food because of tonsillitis, jaw injuries or similar conditions.

From an administrative standpoint, it can be pointed out that the liquid dietary is convenient to use. Although ordinarily served chilled, it can be stored unopened without refrigeration. We handed the cans out in the trainer's room while the players were being taped prior to the game; each player had to check his name off the tape list and off the Nutrament list. The product is also economical—about 27 cents a can in bulk purchases. Although this was a minor factor with us, we saved $2 or more a man in breakfast costs before road games.

SUMMARY

A liquid dietary, Nutrament, was used in place of a solid breakfast during preseason training and as a supplement to a light breakfast before all ten games played by the Oklahoma State University football team last fall. Used in this fashion it caused a dramatic drop in incidence of nausea, vomiting and other symptoms of gastrointestinal disturbance, probably because it was digested more rapidly than solid food. Players found the dietary palatable and capable of satisfying the appetite. There were no complaints of "cotton mouth" or unpleasant aftertaste. Coaches were pleased that stamina of players was fully as great, and possibly greater, under the liquid dietary program as under previous feeding arrangements. The liquid meal was also useful in helping players maintain ideal playing weight; when used as a *substitute* for solid food it enabled several overweight players to reduce, and when used as a *supplement* to regular meals it helped some underweight players to gain weight. □

BIBLIOGRAPHY

1. Bullen, B., Mayer, J. and Stare, F. J.: Athletics and Nutrition. American Journal of Surgery, 98: 343-352, Sept. 1959.
2. Mays, R. W. and Scoular, F. I.: Food Eaten by Athletes. Journal of the American Dietetic Association, 39: 225-227, Sept. 1961.
3. Rose, K. D. and Fuenning, S. I.: Pre-Game Emotional Tension, Gastrointestinal Motility and the Feeding of Athletes. Nebraska State Medical Journal, 45: 575-579, Dec. 1960.
4. Rose, K. D., Schneider, P. J. and Sullivan, G. F.: A Liquid Pregame Meal for Athletes. Journal of the American Medical Association, 178: 130-133, Oct. 7, 1961.

Donald L. Cooper, M.D.
Oklahoma State University, Stillwater, Oklahoma

Amniotic Fluid Embolism

WILLIAM E. JAQUES, M.D.*

A great interest in amniotic fluid embolism has developed since the first recognition of this disease by Steiner and Lushbaugh in 1941. The entrance of amniotic fluid into the maternal circulation is still under investigation. The association with the first stage of labor suggests that the fetal head may act as a tampon in forcing the fluid into the sinuses. The major emphasis has been placed on the sudden death and bleeding phenomenon as as obstetrical complication. However, during the years since its discovery it has become apparent that cardiovascular changes may accompany this condition.

If human or dog amniotic fluid is injected into a dog of either sex a rapid response is repetitiously seen in the lesser circulation. There is a rapid rise in the pulmonary artery pressures with no appreciable change in the systemic arterial pressures. At subsequent right-sided cardiac catheterizations, the pulmonary artery pressure is found to be above the pre-injection value. Repeated injections of amniotic fluid cause a stepwise rise in pulmonary artery pressure.

Autopsies performed on dogs at intervals following the injection of amniotic fluid initially demonstrates fibrin thrombi with squamous cells intermixed. Later these thrombi undergo organization with a resultant intimal thickening. A similar process can be seen in cases of human amniotic fluid embolism coming to necropsy.

The pulmonary hypertensive response can be prevented by a bilateral cervical vagotomy in dogs. It is therefore probable that the initial pulmonary hypertensive response is mediated through the vagus nerves and is neurogenic in origin. The sustained pulmonary hypertension on the other hand is probably due to the increased pulmonary vascular resistance produced by the organization of thrombi and intimal thickening.

There are occasional human cases of non-fatal amniotic fluid embolism that subsequently develop signs and symptoms of cor pulmonale which may represent a process similar to that produced experimentally.

Amniotic fluid acts in vitro as a potent thromboplastin yet the entrance of amniotic fluid into the maternal circulation may result in spontaneous bleeding. This is accomplished by a lowered fibrinogen content and an increase in fibrinolytic activity. In the experimental animal there is a prompt fall in fibrinogen, variable changes in platelets and a temporary impairment in prothrombin utilization. This defect is localized in the serum with the thromboplastin generation test and corrected by the addition of $BaSO_4$ absorbed normal dog plasma or serum. Serum from a patient clinically thought to have plasma thromboplastin antecedent (P.T.A.) deficiency does not correct the dogs defect in vitro whereas normal human serum dues.

Although cases of human amniotic fluid embolism are not common, it is important that the clinician have some insight into the pathogenesis of the condition and realize that non-fatal cases may lead to right-sided heart failure.

* * *

EDITOR'S NOTE. The film "The Cardiac Patient in Stress: Work, Surgery, and Pregnancy" is available at small cost for showing at hospital staff meetings, county society meetings, etc. For information regarding this film, write Oklahoma State Heart Association, 825 N.E. 13th Street, Oklahoma City, Oklahoma.

*Professor and Chairman, Department of Pathology, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

Dean's Message

An experimental series of medical postgraduate courses was conducted in the state last year over educational television channels 11 and 13 in Tulsa and Oklahoma City. The primary objectives were to determine (1) whether such open channel teaching was of value, (2) whether a sufficient number of physicians outside of the large medical communities were located in areas receiving an adequate television image, and (3) to gain some knowledge of the problems involved in programming.

The series was conducted as a joint experiment by the Oklahoma State Medical Association, Mr. John W. Dunn of the Oklahoma Educational Television Authority, and the University of Oklahoma Medical Center.

Announcements of the trial series were sent to all licensed physicians in Oklahoma. Approximately 600 agreed to participate. It was found that a vast majority of the practicing physicians are in areas where it is feasible to take part. Approximately 90 per cent of those who participated said they felt the series to be of some or considerable value and were interested in seeing a continuation of such programs.

Present plans are for further exploration in this field of postgraduate education via open channel television, and experience with this teaching device in other states is being evaluated. The House of Delegates of the Oklahoma State Medical Association at its annual meeting voted to continue its support and to provide some financial backing for programs next year should they be developed.

Possibly television will soon become a permanent adjunct in presenting local and national medical programs. Whether it will be via open channel, closed channel or restricted viewing by some form of image encoding at the TV stations and decoding at the doctor's TV set will be determined by the experimentation of various agencies. The latter system, while possible, is fraught with teaching and cost problems. It is apparent that television as a teaching aid to the medical profession is in for an extensive trial by the physicians of Oklahoma and the nation. □

Mark R Everett

A Histochemical Study of Vitiligo

JAMES GARNER
MARK ALLEN EVERETT, M.D.*

THE ETIOLOGY of vitiligo remains obscure in spite of extensive investigation by various workers regarding the factors involved in this acquired achromia. One of the most intriguing areas of investigation has been related to possible adrenergic hormone alterations in vitiligenous skin.

In 1948 Whitaker and Baker reported that the local application of adrenal cortical hormones was capable of exerting an inhibitory effect on melanin formation in a direct fashion.[1] Later, Grollman[2] demonstrated that epinephrine induced contraction of pigment in the scales of small fish, *fundulus*, and in melanophores. Lerner observed that norepinephrine, and to a lesser extent epinephrine, affected the melanophores directly, to a certain degree, by blocking the melanophore expanding effect of MSH in excised frog skin.[3] In 1953 Van Scott, Rothman and Green, demonstrated that hyperpigmented skin in post inflammatory conditions had approximately one-half the sulfhydryl content of the surrounding unaffected skin and that vitiligenous skin had about twice as high a sulfhydryl content.[4]

The possibility of a neurogenic origin of vitiligo has been considered by numerous workers. Parker, et al., working on the hypothesis that a "double antagonistic" autonomic innervation of the contractile chromatophores exists in lower vertebrates analyzed the skin of the catfish, *ameirus*, and found 0.02-0.082 δ of acetylcholine per gram of moist skin in the dark dorsal areas and 0.005-0.04 δ in the lighter ventral areas.[5] Robbins observed that in unilaterally sympathectomized patients who had bilateral vitiligo there was marked dimunition of depigmentation with a return toward normal skin color of vitiligenous areas on the sympathectomized or injured side.[6] Haxthausen demonstrated that transplanted normally pigmented grafts became depigmented when placed in a vitiligenous area.[7]

Several tenable hypotheses for explaining the phenomenon of depigmentation in vitiligo have been presented. Rothman suggested the possibility of specific inactivation of the protein component of the enzyme tyrosinase by specific tyrosinase antibodies[8] or inhibition of the action of tyrosinase through the binding of copper by the high sulfhydryl content of vitiligenous skin.[9] The localized distribution of vitiligenous lesions prompted the consideration that localized excessive activity at adrenergic nerve endings might result in the release of epinephrine and hence depigmentation.

The presence of a cutaneous chromaffin system was suggested by Adams-Ray and Nordenstam in 1956 after they demonstrated dermal chromaffin reacting granules with a

*Department of Dermatology, University of Oklahoma Medical Center, Oklahoma City, Oklahoma. Presented to the Oklahoma State Dermatological Society, May, 1962.

predominately perivascular distribution associated with the release of a vasopresser substance which was thought to be epinephrine, norepinephrine or some other similar compound.[10] They utilized bichromate fixation (Orth's solution) which results in a characteristic dark brown stain, and a modified Sevki stain, a non-specific stain for chromaffin tissues. Burch and Phillips in 1958 extended these original studies while investigating human digital skin.[11] Mercantini in 1960 believed that the existence of chromaffin cells and granules in human skin as suggested by Adams-Ray was disproved when he examined human skin biopsies from white and Negro patients. He studied the following stains: (1) hematoxylin and eosin, (2) modified Giemsa, (3) toluidine blue at pH of 6, (4) periodic acid-Schiff, (5) argentaffin, (6) ferric-ferricyanide reaction, (7) AZO coupling reaction, (8) indophenol reaction, and (9) the chromaffin reaction. He noted that the characteristic color reactions for epinephrine were demonstrated by these stains in the human, rat, and rabbit adrenal glands but not in human skin, and, he stated, "Numerous cells and granules as described by Adams-Ray were noted localized around nerves, blood vessels, and definitely localized to the walls of small vessels, but these proved to be macrophages, mast cells, chromatophores or melanin granules." The chromaffin reaction was not positive in any of the human skin sections.[12]

In December, 1961, when DeOreo and Stoughton reviewed the literature they were unable to find any direct evidence of epinephrine or norepinephrine being present in human skin. Their attempt to demonstrate the presence of these substances in the skin by injection of catechol-o-methyl transferase and monoamine oxidase inhibitors was also unsuccessful.[13] A recent histopathological study by us gave interesting results which may contribute to our thinking about the possible role of epinephrine and epinephrine-like substances in vitiligo.

METHOD AND RESULTS

In this study, biopsies of human skin were obtained from both vitiligenous and normally pigmented areas on each patient. These tissues were then frozen with liquid nitrogen and the following stains were done: (1) ferrous iron uptake (Lillie's), (2) Millon's reaction, (3) DOPA, (4) silver, (5) iodate epinephrine, (6) iodate norepinephrine. The results are tabulated in table 1.

Table 1

Staining Reactions in Vitiligo

Patient	Stain							
	Lillie's Ferrous Iron		Epinephrine		Norepinephrine		Millon's Reaction	
	N	V	N	V	N	V	N	V
1	++	O	+++	+++	++	O	++	O
2	+	O	++	++	++	O	+	O
3	+++	O	—	—	—	—	+++	O
4	+++	O	—	—	—	—	++	O
5	—	—	++++	+++	+	+	—	—
6	—	—	++	+	+	O	—	—
7	—	—	++++	++++	+++	++	—	—
8	—	—	+	+	+	O	—	—

N = Normal V = Vitiligo

DISCUSSION

It is known that aromatic compounds containing two hydroxyl or two amino groups in the ortho or para positions will give a brown color reaction with dichromate.[14] Compounds containing such configurations are: DOPA, melanin, norepinephrine and epinephrine. In this reaction, the reacting substance is converted to a quinone which then couples with a molecule of the original reacting substance. The oxidation of epinephrine (adrenalin) yields adrenochrome, and tyrosine when oxidized yields DOPA. It has also been hypothesized that a similar reaction takes place with norepinephrine (noradrenalin) yielding noradrenochrome which will stain positively using this technique. Therefore this stain is not useful in differentiating melanin and its precursors from sympathetic hormones.

Oxidation with dichromate or chromate gives a positive reaction rapidly with both epinephrine and norepinephrine. In attempting to differentiate between these two compounds with potassium iodate the speed of the reaction is important. Norepinephrine at pH of 5-6 is converted into a dark brown pigment within a few minutes while epinephrine requires 24 hours to undergo this reaction.[15] Millon's reaction is positive in

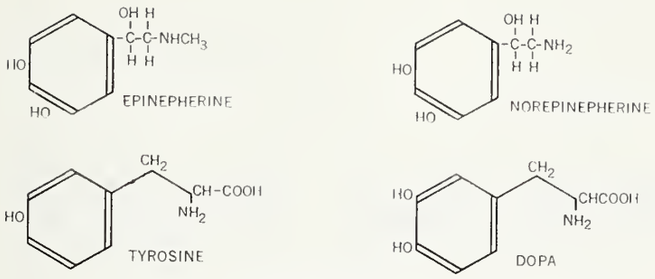


Figure One
Structural Formulae of Compounds

the presence of a hydroxyphenol group (C_6H_4OH) which is unsubstituted at the 3-5 position. Millon's test is positive for tyrosine but not DOPA, epinephrine, or norepinephrine.[16] The ferrous iron uptake is a specific stain for melanin giving characteristic blue-green color with melanin granules.[17]

The following observations were made in our study: (1) In the vitiligenous epidermis there was only one positive stain, that for epinephrine; (2) the normally pigmented epidermis stains positively for chromaffin, melanin, and tyrosine; (3) in vitiligenous skin there are no positive reactions with stains specific for DOPA, melanin, or tyrosine.

In the skin of these few patients with vitiligo the presence of epinephrine or an epinephrine-like compound has apparently been histopathologically confirmed. It is possible that previous failures to demonstrate its presence were due to the study of normally pigmented skin where its presence is obscured by melanin. In this study we were unable to determine whether or not epinephrine is present in normal skin. □

BIBLIOGRAPHY

1. Whitaker, W. L. and Baker, B. L., "Inhibition of Hair Growth by the Percutaneous Application of Certain Adrenal Cortical Preparations," Science, 108:207-8:48.
2. Grollman, Arthur, Pharmacology and Therapeutics, 4th Ed. Lea and Febiger, Phila. 1960.
3. Lerner, A. B., Cited in Rothman, S., "Physiology and Biochemistry of the Skin," Univ. Chicago Press, 1954, p. 547.
4. Van Scott, E. J., Rothman, S., and Greene, C. R., "Studies on the Sulfhydryl Content of the Skin," J. Invest, Derm. 20: 111-15:53.
5. Parker, G. H., Welsh, J. H. and Hyde, J. E., "The Amount of Acetylicholine in the Dark Skin and the Pale Skin of the Catfish," Proc. Nat. Acad. Sci. 31:1:45.
6. Robbins, S. L., Textbook of Pathology, Saunders Co., Phil. and London, 1958.
7. Hauxthausen, H., "Studies on the Pathogenesis of Morphea, Vitiligo and Dermatitis Atrophicans by Means of Transplantation Experiments," Acta. Derm. 27:352:47.
8. Rothman, S., Op. Cit. p. 331.
9. Rothman, S., Ibid., p. 533.
10. Adams-Ray, J., and Nordenstam, H., "Un Systeme Cellules Chromaffin Dans La Peau Humaine," Lyon Chir. 52:125:56.
11. Burch, G. E., and Phillips, J. H., "Chromaffin Reacting Cells in Human Digital Skin," Circulation Research, 6:416-423:58.
12. Mercantini, E. S., "Failure to Show the Presence of a Chromaffin System of Cells in the Human Skin," J. Invest. Derm. 34:317-18:60.
13. DeOreo, G. A., and Stoughton, R. B., "Monamine Oxidase and Catechol O-Methyl Transferase Inhibitors," AMA Arch. Derm. 84:972-979:61.
14. Pearse, A. G. E., "Histochemistry," Little, Brown and Co., Boston, 1960, p. 637.
15. Pearse, A. G. E., Ibid, p. 639.
16. Hauk, Oser and Summerson, "Practical Physical Chemistry," Blakiston, Phil., 1948, p. 155.
17. Lillie, Ralph D., "Ferrous Iron Uptake," Arch. Path., 64:100:57.

James Garner,
Iowa Methodist Hospital, Des Moines, Iowa

APPROVED MEDICAL SCHOOLS NOW NUMBER 87

Two medical schools were added to the list of accredited institutions during the past year, bringing the total to 87, according to the anual report (November 16th) on medical education of the American Medical Association.

The new additions are the University of Kentucky College of Medicine, Lexington, and the California College of Medicine, Los Angeles, formerly the College of Osteopathic Physicians and Surgeons.

Approval is granted by the AMA and the Association of American Medical Colleges. There are now no unapproved medical schools in the nation.

The 1961-62 report, prepared by the AMA Council on Medical Education and Hospitals, said "10 or 12" new medical schools are currently being planned.

Five universities—Brown, Rutgers, Connecticut, New Mexico and Texas—are proceeding with plans announced last year to establish two to four-year medical schools, the report said, adding:

"In almost every state there is some consideration for the possibility of developing new schools within the next decade. Of the many states that have initiated formal or informal considerations of the feasibility of establishing a new school, Arizona, California, Maryland, Massachusetts, Michigan, New York, and Ohio seem most likely to be the sites of new schools in the foreseeable future." □

Isolated Aneurysms of the Iliac Arteries*

J. A. BARNEY, M.D.
G. R. WILLIAMS, M.D.**

In recent years aneurysms of the abdominal aorta have received a great deal of attention in medical literature. Less commonly than the aorta, the iliac arteries are the site of arteriosclerotic aneurysms and these lesions are of interest because they usually cannot be felt on abdominal examination; in fact, rupture of the aneurysm is frequently the presenting clinical picture. Continued increase in the number of problems associated with arteriosclerosis encountered in medical practice and the availability of reliable methods of treatment make it pertinent to report three cases of arteriosclerotic aneurysm of the iliac arteries recently encountered at the University of Oklahoma Medical Center.

CASE REPORTS

Case 1: (W.T. 27-38-37) A 72-year-old white male was admitted to the University Hospital on 1 August 1958 complaining of generalized skin rash of seven months' duration, a perineal abscess which had been draining for two weeks and swelling of the scrotum for one week. Examination at the time of admission revealed an elderly white male who appeared chronically ill with a pulse rate of 96 and blood pressure of 130/70 mm. Hg. The skin was dry and atrophic and there was a generalized maculopapular rash. No abdominal mass or tenderness was found. The scrotum was red and edematous but only slightly tender. In the perineum there was a draining sinus tract with surrounding induration and fluctuance extending towards the scrotum. No communication with the rectum was present and no rectal tenderness or masses were detected. Peripheral pulses were strong and equal. Admission laboratory data included a hemoglobin of 9.6 gm. per cent, hematocrit of 29 per cent, and WBC of 11,150. The urine had a specific gravity of 1.012, 2+ protein, 8-10 WBC/HPF and innumberable RBC/HPF.

The skin rash was considered to be a sensitivity reaction to penicillin which the patient had received shortly before the onset of the skin eruption. The draining sinus in the perineum was noted to extend into the scrotum and was felt to originate from a urinary infection. Incision and drainage of the perineal abscess was followed by staphlococcus septicemia which responded to antibiotic therapy.

Four weeks after admission the patient developed recurrent episodes of left lower quadrant abdominal pain, mildly cramping in nature. Examination at that time revealed moderate tenderness and muscle guarding localized to the left lower quadrant with mild abdominal distention and no palpable mass. A barium enema revealed no abnormalities. The left lower abdominal pain persisted off and on for the next week without explanation. Forty-one days after admission to the hospital and eight days after the onset of abdominal pain, the patient suddenly expired. Autopsy revealed a 9 $\times$ 9 cm. arteriosclerotic aneurysm of the left common iliac artery with perforation and massive bleeding into the retroperitoneal space. The aneurysm was partially filled with thrombus which on microscopic examination was densely infil-

*From the Department of Surgery, University of Oklahoma Medical Center.
**Markle Scholar in Medical Sciences.

trated with organisms morphologically resembling staphlococci.

Case 2: (W.W. 29-61-89) A 62-year-old white male was admitted to the University Hospitals on 7 April 1960, four days after the sudden onset of severe left lower quadrant abdominal pain with nausea and weakness. Twelve hours after the onset laparotomy was performed. At operation a large amount of clotted blood was found between the muscle layers of the anterior abdominal wall. No source of bleeding was found and because of a past history of easy bruising and repeated epistaxis it was felt that the patient had a blood dyscrasia. Three days later the patient was transferred to University Hospitals because of oliguria.

On admission the patient was afebrile with a regular pulse of 106, blood pressure of 130/70 and mildly labored respirations. He appeared pale and acutely ill. The abdomen was moderately distended with diminished peristalsis. There was definite tenderness and muscle guarding over both lower quadrants of the abdomen. No masses were detected on abdominal or rectal examination. Femoral pulses were strong and equal but the left dorsalis pedis pulse was decreased compared to the right side. The initial laboratory data were, hemaglobin 6.3 gm. per cent, hematocrit 20 per cent, WBC 12,650, blood urine nitrogen 76 mgm. per cent. Serum electrolytes were within the low limits of normal. Tests of blood coagulation were normal except a mildly prolonged prothrombin time.

Following blood replacement the urine output steadily increased and the patient improved. On the third hospital day he had a sudden onset of severe left lower abdominal pain, hypotension, and an estimated 800 cc. hemorrhage from the abdominal incision. Barium enema performed between bleeding episodes suggested the presence of a mass extrinsic to the colon and displacing the rectum to the right. After several bleeding episodes, each responding to transfusion the patient was taken to surgery. As the abdominal incision was being reopened massive hemorrhage occurred and the patient died. Autopsy revealed a 15 cm. arteriosclerotic aneurysm of the external and common iliac artery with perforation and extensive retroperitoneal hemorrhage.

Case 3: (J.E. 31-66-53) A 74-year-old white male was admitted to University Hospitals on 30 October 1961, four days after the sudden onset of suprapubic pain radiating into both hips and thighs. Twenty-four hours after the onset of the pain an exploratory laparotomy was performed, revealing a large retroperitoneal hematoma. The abdomen was closed and the patient was transferred to this Center.

On arrival at the University Hospitals the temperature was 100°, pulse 108, and blood pressure was 135/75. The abdomen was distended and tympanitic. Marked pulsations were palpable over the entire right lower abdomen. No definite abdominal mass was felt. The hemaglobin was 11.2 gm. per cent, and the hematocrit was 35 per cent. Serum electrolytes were normal and the blood urea nitrogen was 38 mg. per cent.

Operation was carried out as an emergency several hours after admission. A 10 cm. saccular aneurysm of the right common iliac artery was excised and an end to end anastomosis of the common iliac artery to the external iliac artery was performed. The postopertive course was uneventful. The patient was discharged on the 11th postoperative day and remains well at the time of this report.

DISCUSSION

The incidence of arteriosclerotic aneurysms of the iliac arteries is not accurately known. Many of the accepted figures are based upon autopsy findings, a notoriously unreliable method of establishing true incidence, or are based upon older series which could not be expected to give an accurate picture of the present occurrence of this disease.[4, 9, 10, 15, 22, 23] Many authors have listed iliac aneurysm as an entity when associated with abdominal aortic aneurysms. It seems probable that aneurysms of the iliac artery due to arteriosclerosis occur about one-tenth as often as arteriosclerotic aneurysms of the abdominal aorta.[17]

Aneurysms of the iliac artery can result from diseases other than arteriosclerosis. There are several reports of such aneurysms following subacute bacterial endocarditis and questionably following trauma.[6, 7, 18] Aneurysms of the internal iliac artery during

and following pregnancy have been reported.[3, 20] Syphilitic aneurysms of the iliac arteries are uncommon but have been reported.[21] The decline in the incidence of syphilis and subacute bacterial endocarditis has left arteriosclerosis as the most common cause of abdominal aneurysms of all types. Aneurysms due to arteriosclerosis may be either saccular or fusiform. These distinctions are not always clear and frequently the published description of such aneurysms does not allow this separation. It would be of interest to know whether one type is predominant because of the known higher incidence of perforation in the sacular aneurysm.[23]

Clinical manifestation of aneurysms of the iliac arteries are quite variable. Occasionally such aneurysms are visualized on x-ray examination of the abdomen by the presence of of calcium in the aneurysm wall. An additional small number are discovered at laparotomy for other reasons. When the aneurysms become large, obstruction of the ureters may occur.[11] Pain, if present, is nonspecific in character. The lesions are usually not palpable on abdominal examinations although they may become palpable when large. A pulsating mass can be felt occasionally on rectal or pelvic examination. Rupture of the aneurysm without prior symptoms appears to be the most common clinical situation associated with iliac aneurysm. Rupture is generally into the retroperitoneal space with pain and evidence of massive hemorrhage. Such patients usually survive for several days. Rupture of the aneurysm into the gastrointestinal tract has been reported[1, 2, 13] and rupture into the iliac vein is a possibility. (No cases reported)

Treatment of aneurysm of the iliac artery is surgical resection with reestablishment of arterial continuity. Ligation of the artery particularly for aneurysm of the internal iliac artery has been practiced occasionally since the fascinating account of Mott.[8, 12, 16, 19] Because the resection of iliac aneurysms may involve only cross-clamping of the iliac artery, many of the sequelae of prolonged aortic cross-clamping are avoidable and the mortality rate should be lower than for aortic aneurysms.

The cases reported in this communication require little comment except that they emphasize the hazard of aneurysms of the iliac arteries, and the difficulty in making a diagnosis. The third case illustrates the therapeutic possibilities with proper management.

SUMMARY

Three cases of arteriosclerotic aneurysm of the iliac arteries, all ruptured before diagnosis was established, have been encountered at the University of Oklahoma Medical Center during the past four years.

These aneurysms present problems in diagnosis because the lesions are usually not palpable until rupture occurs.

Present management of these aneurysms is surgical resection and restoration of arterial continuity. □

BIBLIOGRAPHY

1. Abramson, P. D. and J. B. Jameson, "Rupture of Iliac Aneurysm into Duodenum: An Unusual Cause of Upper Gastrointestinal Hemorrhage," A.M.A. Arch. Surg., 71: 658, 1955.
2. Atin, H. L., "Rupture of an Iliac Artery Aneurysm into the Sigmoid Colon," New England J. Med. 258: 366, 1959.
3. Brown, T. K. and S. D. Soule, "Aneurysm of the Internal Iliac Artery Complicating Pregnancy," Am. J. Obst. and Gynec., 27: 766, 1934.
4. Crane, C., "Arteriosclerotic Aneurysms of Abdominal Aorta: Some Pathological and Clinical Correlation," New England J. Med., 253: 954, 1955.
5. Estes, J. E., "Abdominal Aortic Aneurysm: A Study of One Hundred and Two Cases," Circulation, 2: 258, 1950.
6. Fenn, W. E. and J. E. Musgrove, "Common Iliac Artery Aneurysm in a Boy Six Years of Age," Ann. Surg., 147: 109, 1958.
7. Fernbach, P. A., L. Berman and B. Cohen, "Intraperitoneal Rupture of Iliac Aneurysm with Survival Following Surgical Treatment," Ann. Surg. 135: 570, 1952.
8. Frank, I. N., H. T. Thompson, C. Rob, and S. I. Schwartz, "Aneurysm of the Internal Iliac Artery," Arch. of Surg., 83: 6, 956, 1961.
9. Garland, H. G., "The Pathology of Aneurysm. A Review of 167 Autopsies," J. Path. and Bact., 35: 334, 1932.
10. Gliedman, M. L., W. B. Ayers, and B. L. Vestal, "Aneurysm of the Abdominal Aorta and Its Branches," Ann. Surg., 146: 207, 1957.
11. Goodwin, W. E., and H. B. Shumacker, Jr., "Aneurysm of the Hypogastric Artery Producing Urinary Tract Obstruction," J. of Urology, 57: 839, 1947.
12. Halsted, W. S., "The Effect of Ligature of the Common Iliac Artery on the Circulation and Function of the Lower Extremities," Tr. Am. Surg. Assoc., 30: 196, 1912.
13. Jackman, R. J., H. B. McQuarrie and J. E. Edwards, "Fatal Rectal Hemorrhage Caused by an Aneurysm of the Internal Iliac Artery: Report of a Case," Proc. Staff Meet. Mayo Clinic, 23: 305. 1948.
14. Kirkland, K. and K. W. Starr, "Aneurysm of the Right Internal Iliac Artery: Five Year Cure," M. J. Australia, 2: 299, 1953.
15. Lucke, B. and M. H. Rea, "Studies of Aneurysm," J.A.M.A., 77: 935, 1921.
16. MacLaren, A., "Aneurysm of the Internal Iliac," Ann. Surg., 58: 269, 1913.
17. Markowitz, A. M. and J. C. Norman, "Aneurysms of the Iliac Arteries," Ann. of Surg., 154: 5, 777. 1961.
18. Moore, H. D. and M. Telling, "Resection of the Aortic Bifurcation for Relief of a Mycotic Aneurysm of the Left Common Iliac Artery, and its Replacement by a Preserved Arterial Graft. With a Discussion of the Treatment of Aneurysms, Illustrated by Three Further Examples," Brit. J. Surg., 42: 420, 1955.
19. Mott, V., "Successful Ligature of the Common Iliac Artery," Am. J. Med. Sci., 1: 156, 1827.
20. Priddle, H. D., "Rupture of an Aneurysm of the Left External Iliac Artery During Pregnancy," Am. J. Obst. and Gynec., 63: 461, 1952.
21. Scott, V., "Abdominal Aneurysms. A Report of 96 Cases," Am. J. Syph., Gonor. and Ven Dis., 28: 682. 1944.
22. Wheelock, F., and R. S. Shaw, "Aneurysms of the Abdominal Aorta and Iliac Arteries," New England J. Med., 255: 72, 1956.
23. Zeck, R. K., and K. Merendino, "A Study of One Hundred and Sixteen Aneurysms of the Aorta and Iliac Arteries with Remarks Concerning Surgical Attitudes," Am. Surg., 20: 1150, 1954.

J. A. Barney, M.D.
St. Anthony Hospital, Oklahoma City, Oklahoma

ABSTRACTS

VITAMIN B_6 ANEMIA

Two patients with hypochromic microcytic anemia had a rise in hemoglobin after the administration of pyridoxine, although the morphometry and coloration of the red cells were unchanged.*

One patient was a chronically alcoholic male who was admitted to the hospital because of a respiratory infection and thrombophlebitis. Hepatosplenomegaly was present. A hypochromic microcytic anemia was found, and the bone marrow was reported as showing erythroid hyperplasia and an increased deposition of hemosiderin. Needle biopsy of the liver showed an increased iron content of the liver and Kupffer cells, and cirrhotic changes. The red cell half-life was decreased, and the serum iron was elevated.

The second patient was a housewife who was admitted because of an anemia known to be present for three and one-half years. Hepatosplenomegaly was present, and examination of the blood showed a microcytic hypochromic anemia with a high serum iron level. There was normoblastic hyperplasia and increased hemosiderin accumulation in the bone marrow.

Both patients showed prompt reticulocytosis and a rise in hemoglobin when pyridoxine was administered. Continuance of this vitamin has maintained the hemoglobin at normal levels. The second patient also showed an abnormal tryptophane metabolism which was corrected by taking pyridoxine. The possible significance of this finding in relation to the anemia is outlined.

REVIEWER'S NOTE: Many hospitals cannot provide (nor can many patients afford) the extensive studies which were employed in the investigation of these cases. It would seem reasonable, however, that if one encounters a patient who has an enlarged liver and spleen, a hypochromic microcytic anemia with high levels of serum iron, and a bone marrow showing normoblastic proliferation and hemosiderin deposition, then the diagnosis of pyridoxine-responsive anemia can be justifiably suspected. A therapeutic trial with this vitamin alone should quickly and inexpensively provide conclusive evidence.

*Pyridoxine-Responsive Anemia. Sylvia S. Bottomley. Journal of the American Medical Association **180**: 653-659 (May 26) 1962.

CANCER CHEMOTHERAPY

Amethopterin (Methotrexate), a folic acid antagonist, was administered to 86 patients with carcinomas or sarcomas which could not be controlled by the ordinarily employed radiative or surgical techniques.* This drug (like aminopterin) is somewhat unusual in that its toxicity increases with the frequency of administration; e.g., a daily doses of x units is better tolerated when administered in one dose than the same amount of drug divided into four portions given over a 24-hour period. Previous work had indicated that doses of six mg/kg given at bi-weekly intervals were well tolerated, and such dosage was here employed.

Nine of 43 patients with adenocarcinomas of varying origin showed objective improvement as measured by a 50 per cent or greater reduction in tumor size. By the same criterion, of 27 patients with epidermal carcinomas, nine had inhibition of their neoplasms, and two patients out of 16 having a miscellaneous group of tumors were improved.

Fifty-seven of the patients had toxic reactions to the drug ranging from oral ulcers, nausea, vomiting and diarrhea to severe depression of leukocyte and platelet counts. Four patients succumbed to the effects of the drug. Because of the frequency of noxious responses, the authors feel that a reduction in dose to five mg/kg is in order.

The rather unexpected success (33 per cent) of the drug in epidermoid carcinomas suggests that it may have a useful place in the treatment of some of these lesions.

REVIEWER'S NOTE: Even though the margin between therapeutic efficacy and ruinous toxicity is thin enough to freeze the marrow of all but the most intrepid physician, these drugs are coming into wider use. Just how much drug is necessary and how often to give it to obtain the best results is still conjectural, although a few guide lines are appearing. Against a disease for which we can offer only mutilating surgery or destructive radiation, the chemotherapeutic agents —imperfect though they be—are worthy of trial. Even when objective evidence of benefit was lacking, the authors report "subjective improvement" in many instances. Clarification and the significance of these comments would be welcome.

*Studies on the Folic Acid Vitamins. VII. The Effects of Large Doses of Amethopterin in Patients with Cancer. Paul T. Condit, Bruce I. Shnider, and Albert H. Owens, Jr. Cancer Research **22**: 706-712 (July) 1962.

RECENT PUBLICATIONS FROM THE MEDICAL CENTER

Advanced Dental Education in Oklahoma. P. W. Goaz. Journal of the Oklahoma State Dental Association **52**: 6, 1962.

Glucose-6-Phosphate Dehydrogenase from Erythrocytes I. Further Purifications and Characteristics. H. N. Kirkman. Journal of Biologic Chemistry **237**: 2364, 1962.

Local Effects of Various Anions and H+ on Dog Limb and Coronary Vascular Resistances. J. I. Molnar, J. B. Scott, E. D. Frohlich and F. J. Haddy. American Journal of Physiology **203**: 125, 1962.

Fluorescent Spot Test for Anti-Nuclear Antibodies. G. J. Friou. Arthritis and Rheumatism **5**: 407, 1962.

Report for Analytical Chemists: Clinical Chemistry. K. M. Dubowski et. al. Analytical Chemistry **34**: 23A, 1962.

Reprints of the above publications are usually available on request from the senior author, c/o Mrs. Joan Campbell, Veterans Administration Hospital, 921 N.E. 13th Street, Oklahoma City, Oklahoma.

COUNTIES ASKED TO PARTICIPATE IN PR, LEGISLATIVE PROJECTS

"To develop improved relations with the public we serve, and with the lawmakers who serve us."

These few words describe the basic objectives of the OSMA Council on Public Policy—the public relations and legislative arm of the association's committee structure.

Doctor Rex E. Kenyon, council chairman, announced the goals at an October 28th Conference of County Medical Society Officers, then followed up with a written appeal to county presidents for action.

"The legislative situation is critical," Doctor Kenyon said, "and we must gear our county societies and state organization to successfully meet the recurring challenges to freedom in health care.

"Each congressional year," he continued, "liberal forces will hit us with legislative proposals demanding short-range 'crash' programs of medical society activity, such as the OSMA successfully mounted against the Forand Bill and last session's King-Anderson Bill.

"This type of crash program will still be necessary for years to come —that is if we keep on winning—but we must not lose sight of our long-range objective, which is to maintain public goodwill for our profession and achieve massive public support for our position on political issues of serious consequence."

Thus, he summed up the two-pronged aims of his council—legislation and public relations—and, in his recent letter to county presidents, he laid the groundwork for county action in both efforts.

County Public Relations

The Council on Public Policy has furnished county society presidents with ideas and materials designed to help them conduct community service projects at the local level. Each president has been asked to submit the program to his membership and gain endorsement of at least three major public relations projects to be carried out between the months of January and June.

"Timing is important," Doctor Kenyon said, "we need to establish the best possible rapport with the public during the critical months of our legislative fight, and it will probably be during the first five or six months of Congress that legislators will form their positions on the next social security health bill."

To help county societies develop favorable public climate, the Council on Public Policy has recommended such projects as mass polio immunization drives, auto safety belt campaigns, immunization education programs, health education fairs and public service advertising.

Materials on these subjects are available through the Oklahoma State Medical Association and the AMA. County presidents have already received a public service advertising series from the AMA which is designed for local use. In addition, the OSMA has furnished county societies with public relations handbooks containing many other easy-to-implement projects.

Legislative Action

Through the cooperative efforts of the OSMA, county medical societies and other groups and individuals, the Council on Public Policy hopes to solidify the majority of Oklahoma's Congressional delegation against social security health care legislation and to cooperate with other groups friendly to the political philosophy of organized medicine.

County presidents have been asked by Doctor Kenyon to appoint six-man legislative action committees for this purpose.

From the federal legislation standpoint, each person serving on such a committee will have a specific responsibility, such as press relations, speakers bureau, resolutions, letter writing, and liaison with the woman's auxiliary. The committees will also serve as local contact for the OSMA in dealing with problems emanating from the state legislature.

As soon as the county committees are formed and reported to OSMA headquarters, information will be sent to them regarding the forthcoming federal and state legislative arenas.

OSMA Projects

An expanded public relations budget, made possible by the Board of Trustees, will enable the Council on Public Policy to utilize mass media for public relations purposes. Radio and television spot announcements, television programs, a health column and a health education cartoon series for weekly newspapers, and newspaper advertising mats are but a few of the projects planned during the legislative campaign. □

AMA Meets In Los Angeles

Health care for the aged, medical ethics, graduate medical education, expansion of the AMA Board of Trustees and a study of the sections and scientific program of the AMA were among the major subjects acted upon by the House of Delegates at the American Medical Association's Sixteenth Clinical Meeting held November 25-28 in Los Angeles.

In keynoting the Association's attitude toward Social Security health care for the aged, Doctor George M. Fister of Ogden, Utah, AMA president, told the opening session of the House:

"We will not compromise on the fundamental principles in which we believe and for which we have fought in the past with courage and good judgment. We will not jeopardize

our position either by indicating a willingness to consider a compromise which would damage our basic principles, or by hasty action which might be misinterpreted."

The House reaffirmed, without compromise or change, the Association's present policy of opposition to the King-Anderson type of legislation and support for the Kerr-Mills program. In so doing, it also approved several amendments to the Kerr-Mills Law, among them a provision to increase flexibility in the administration of the income limitations proposed under state law, so that a person who experiences a major illness may qualify for benefits if the expense of that illness, in effect, reduces his money income below the maximum provided.

At the same time, the House also endorsed in principal four proposed amendments to the Internal Revenue Code, designed to assist in financing the medical and hospital expenses of the aged. These amendments would: liberalize tax deductions for medical expenses of dependents over age 65; remove the one per cent drug limitation and include drugs as medical expenses; permit taxpayers over age 65 to receive full tax benefit for medical expenses by use of the carry-forward and carry-back principle, and provide a tax credit for medical expenses paid by the over age 65 taxpayer, proportionate to the relation between his medical expense and taxable income.

In considering seven so-called "pledge" resolutions, involving professional freedom, the House adopted a substitute resolution urging that all physicians be encouraged to support the position taken by the House of Delegates in June, 1961. That policy statement said:

"The House of Delegates invites attention to the fact that the medical profession is the only group which can render medical care under any system and that the medical profession is best qualified to determine how the best medical care can be delivered.

"The House of Delegates believes that the medical profession will see to it that every person receives the best available medical care regardless of his ability to pay, and it further believes that the profession will render that care according to the system it believes is in the public interest and that it will not be a willing party to implementing any system which is detrimental to the public welfare."

Medical Ethics

The Judicial Council submitted a report containing new opinions on the medical ethics involved in physician ownership of drug stores, drug repacking houses and drug companies, dispensing of glasses by ophthalmologists, and advertising practices of medical laboratories. The House decided that the questions of physician ownership of drug stores, drug repackaging houses and drug companies, and the dispensing of glasses by ophthalmologists, should not be acted upon at this time. Those opinions were returned to the Judicial Council for further study and report. The House approved the portion of the report relating to advertising practices of medical laboratories and agreed that the propriety of such practices should be determined at the local level in compliance with the new opinion.

Interns and Residents

A special report on the compensation of interns and residents, which was published in the October 27 issue of JAMA, was presented to the House by the Council on Medical Education and Hospitals and the Council on Medical Service. The report was submitted as information only, with a request for further study, comments and suggestions. The House urged that all delegates, hospital staffs and medical societies discuss the report and forward all suggestions to the two Councils in time to influence the form of the report to be presented for action at the June, 1963, meeting.

In another action on graduate medical education, the House approved a report on internships and hospital services in which the Council on Medical Education and Hospitals recommended numerous changes in the Essentials of an Approved Internship.

The House modified one Council recommendation to read as follows:

"In order to maintain high standards of education and better assure the patients' welfare, at least 25 per cent of the total house staff (interns and residents) of a hospital should be graduates of accredited United States or Canadian medical schools. When United States and Canadian graduates represent a lesser portion of the house staff for two successive years, this will warrant that serious consideration be given to disapproving the internship."

The House instructed the Council on Medical Education and Hospitals to exert every possible effort and influence so that all hospitals with approved house officer training programs accept a reasonable number of foreign medical school graduates.

(Continued on Page 502)

Roger Harrison Associates

Business Consultants to the Medical Profession

Classen Terrace Building **Phone JAckson 4-1427**

OKLAHOMA CITY 6, OKLAHOMA

Member, Society of Professional Business Consultants

Committee Studies Insurance Trust For the Aged

The Prepaid Medical Care Committee of the Oklahoma State Medical Association is considering the establishment of a non-profit commercial health insurance trust fund to make possible low cost coverage for the state's elderly citizens.

Kenneth L. Wright, M.D., committee chairman, announced the project following a committee meeting on November 18th, and said his group would meet for further discussion with representatives of the Health Insurance Council on January 5, 1963.

The unique concept of non-profit health insurance from commercial companies was pioneered recently in Connecticut, when the "Connecticut 65" plan was conceived and initiated by major companies headquartered there. Thousands of aged persons enrolled in the Connecticut program and insurance companies in New York state are now implementing a similar endeavor.

Insurance company executives representing Oklahoma affiliates of the Health Insurance Council met in Oklahoma City in October and favorably reacted to an OSMA overture to consider development of a non-profit trust.

To do so, the state legislature will have to pass enabling legislation which will permit participating companies to pool the risk under a trust arrangement. A domestic Oklahoma company must found the trust, then all other interested companies, foreign or domestic, may contribute to the trust and begin selling the non-profit insurance.

In addition to the non-profit feature, it is expected that enrollment requirements will be less stringent than those normally demanded by commercial companies. According to a local member of the Health Insurance Council, the willingness of commercial carriers to venture into the non-profit field has been prompted by recognition of the special needs of the aged population, as well as the threatened political destruction of prepaid health protection (social security health legislation).

"Nothing is definite between the OSMA and the insurance companies," Doctor Wright said, "but we share the common objective of bolstering the quality and quantity of health insurance, and the trust fund idea merits our attention."

He said domestic insurance company presidents are being polled prior to the January 5th meeting to further test the sentiment of Oklahoma's health insurance industry.

Meet With Blue Shield

At the January 5th meeting, the OSMA committee will also have a session with representatives of Oklahoma Blue Cross and Blue Shield. Specifically slated for discussion is the "Special 60" Blue Cross and Blue Shield program for the elderly which has been in effect since 1959.

Also, the new Blue Cross Senior Citizen program, now being implemented nationally, will be explained to the committee by officers of the plan. The program calls for seventy days of hospital care per confinement and a $25.00 deductible for each hospital admission. Only Blue Cross will be offered since Oklahoma policy prohibits local promotion of a companion Blue Shield service contract for the elderly.

New Committee Function

In response to requests from both Blue Shield and health and accident insurance companies, the OSMA Prepaid Medical Care Committee will periodically serve as a "sounding board" for bilateral misunderstandings between the medical profession and third party purveyors of health services. The decision to enter this area of activity has been supported by the OSMA Executive Committee and the Council on Medical Service of the AMA.

The committee is not empowered to undertake disciplinary proceedings against a member of the association, but may refer such cases to the Board of Trustees. □

House of Delegates Fails to Achieve Quorum

A special called meeting of the Oklahoma State Medical Association House of Delegates on November 18th failed to get off the ground. Only fifty-two delegates were reported present by the credentials committee, nineteen short of the mandatory quorum.

OSMA president Carlock had called the meeting for the purpose of selecting an Oklahoma nominee to run for a position on the powerful Board of Trustees of the American Medical Association. When a quorum could not be mustered, an informal discussion was held and it was decided, with the subsequent approval of the Executive Committee, to conduct a referendum ballot of the entire OSMA membership.

Three candidates for the nomination had been previously nominated and supported by members of the OSMA Board of Trustees. They are: John F. Burton, M.D., Oklahoma City, past-president of the OSMA and currently chairman of the AMA Council on Medical Service; John E. McDonald, M.D., Tulsa, past-president of the OSMA and now a member of the AMA Council on Legislative Activities; Malcom E. Phelps, M.D., OSMA Delegate to the AMA and formerly president of the American Academy of General Practice.

The referendum ballot approved by the Executive Committee contained the names of the aforementioned physicians as well as a provision for a write-in candidate of the respondent's choice. Mailed to all members on November 19th, the referendum will be officially tabulated on December 15th by a committee to be named by the president.

The physician receiving the plurality of the votes received at OSMA headquarters no later than December 15th will gain OSMA sponsorship for the high AMA office.

The AMA Board of Trustees will be expanded at the June meeting of the House of Delegates in Atlantic City. □

Most Aged Persons Are Well Off

A new AMA study of the economic condition of American families demonstrates persuasively that the aged as a group are better off on the average than younger families.

The study was based on a survey conducted by the University of Michigan Survey Research Center.

Results of the study of assets and debts, together with an evaluation of incomes by families and ages, strikingly shows, as other similar studies have shown, that the persistent plea for a federalized program of health care for the aged is based on the fraudulent argument that persons over 65 as a group exist in virtual poverty.

The universal characteristic of this bleak portrait of near poverty among the aged is that the statistical evidence is confined solely to income. Those who desire to nationalize health care for the aged assert that people over 65 have an average income less than half that of other age groups and that more than 55 per cent of the aged have incomes of less than $1,000 a year. Thus, they argue, the elderly can't pay for health care and must be rescued from their plight by the federal government.

The use of income alone is intended to convey the impression that the aged exist in a state of economic wretchedness in a land of plenty. The truth is something far different. Income as an exclusive test of economic misery ignores family relationships, assets, debts, tax advantages enjoyed by the aged and other factors which put aged families in a favorable position compared with younger families.

All these factors are explored in the fact sheets which follow. The information on assets and debt was taken from the findings of the University of Michigan Survey Research Center. Facts on income were evaluated from statistics of the U.S. Census Bureau and other government agencies.

Assets and Debts

TOTAL ASSETS—The median value of total assets held by families with the head over 65 was $8,349 in 1960, almost twice as much as the $4,839 which was the median value of total assets of all other age groups. Sixty-three per cent of over-65 families held total assets valued at $5,000 or more, compared with 47 per cent of all other families. And 41 per cent of aged families, compared with 27 per cent of younger, held total assets valued at more than $10,000, while 18 per cent of the aged owned total assets of $25,000 or more compared with only nine per cent of younger families.

HOME EQUITY—The median value of equity in homes for over-65 families was $4,559, almost 4½ times as much as the $1,028 reported for younger families. And of the over-65 families, 53 per cent owned their homes free of mortgage.

LIQUID ASSETS — The median value of liquid assets was almost 2½ times as great for the over-65 families: $1,012 compared with $460.

MEDICAL DEBT—Of great significance because of the controversy over financing health care for the aged, the University of Michigan survey revealed that only four per cent of the over-65 families had any debts at all owed to hospitals, physicians or dentists. Ten per cent of younger families owed such debts.

NO PROBLEM—Worthy of note is evidence that financing medical, hospital and dental costs is no great problem for most Americans, since 96 per cent of aged families and 90 per cent of all other families did not owe physician, dentist or hospital. Furthermore, in all age groups, over 65 included, only one per cent of those who had such debt owed $500 or more.

INSURANCE—Although the Michigan University survey did not touch on health insurance coverage, it can be assumed that insurance plays an important role in meeting health care costs. More than 9½ million of the aged (55 per cent of the total over-65 population) and more than 135 million people of all ages (nearly 75 per cent of the total U.S. population) have health insurance.

Family Income

MISLEADING STATISTICS—Citing income per capita as an economic yardstick without considering the family is misleading because it implies that children, wives and other dependents with little or no income do not share the family resources. Evaluation of income of the aged, if it is to be significant and meaningful when compared with other age groups, must consider the substantial relief given those over 65 through double income tax exemptions, retirement income credit, full medical expense deductions and the exemption from taxation or social security and railroad retirement benefits as well as other pensions, annuities and dividends.

MEDIAN INCOME—In 1960, according to the U.S. Census Bureau, the median income of families whose head was under age 65 was $5,905, a little more than twice as much as the $2,897 for those over 65.

TAX ADVANTAGE — The Census Bureau figures there are 3.9 members in families under 65 and 2.51 members in families over 65. Using the standard 10 per cent federal income tax deduction, the tax obligation of the younger family with median income was $595. For the over-65 family (assuming only the head of the family to be over 65), the tax obligation was only $100. The median incomes are thus reduced to $5,310 for the under-65 family and $2,797 for the over-65 family.

INCOME PER FAMILY MEMBER —Dividing by the number of members of families, the median income per family member for the younger families during 1960 was $1,362, compared with $1,114 for the older families, a difference of only $248 for the year. This difference is even less in the 17 states which allow double exemptions for age from income tax obligations as well as other advantages similar to those allowed on federal income taxes.

FURTHER ADJUSTMENT — Considering the economic status of American families over 65 in light of arguments over health care for the aged, a further adjustment should be

made to remove the 524,000 families receiving old age assistance, which includes medical benefits. When these are eliminated, the median income per family member of the over-65 family is increased to $1,214 and the difference in income per family member between the over-65 and the under-65 families becomes only $148. A parallel adjustment for younger families would be insignificant since only 2.3 per cent of these families receive public assistance.

NUMBERS—In light of the argument that indigency is a problem of the aged, it is interesting to note that there are 4,867,000 persons in the over-65 families with annual income of $2,000 or less while there are 15,648,000 persons in the under-65 families with incomes of $2,000 or less per year. □

ADMISSION BY
PHYSICIAN ONLY

A Distinctive Atmosphere
in A Setting of Elegance

Irene's
NURSING
HOME

THE HALLMARK OF
EXCELLENCE IN CHRONIC
and CONVALESCENT NURSING

1120 N.E. 12th St., Okla. City
CE 2-8091 CE 2-7853

Grove Physician Practices 61 Years

Few if any physicians can challenge the long medical service record of Charles F. Walker, M.D., who has practiced in the community of Grove, Oklahoma, for nearly 61 years.

At the age of 87, the 1902 graduate of St. Louis University School of Medicine still drives his own car and works an eight hour day six days a week. He is an active, dues-paying member of the Ottawa-Craig County Medical Society and the Oklahoma State Medical Association. Eleven years ago, in 1951, the OSMA presented him with a 50 year pin commemorating a half century of medical service.

Doctor Walker hung out his shingle in Grove, Indian Territory, shortly after graduation and started his long medical career in a community which possessed no roads, hospitals or pharmacies.

He knew and cared for the many Cherokee Indians located in the area, and soon learned to read, write and speak the language, a talent he has maintained. Probably no other white man living in Oklahoma today can converse in the Cherokee tongue.

Like so many other pioneer doctors, the physician is revered by the several generations he has brought into the world and comforted; he has personally witnessed the great transition from medicine as an art to medicine as an *art* and *science*.

As an active practitioner, he has kept pace with the advance of science, but has not forgotten the importance of the art. A few years ago he observed . . . "A mother is a natural hypnotist. How often does the child in pain run to the mother to 'kiss it away'. She is better than the doctor in that respect. She tells the child, 'Now it is well,' and he believes her and runs away to play."

In addition to modern therapy, Doctor Walker believes the physician's armamentarium should still contain "a measure of common sense, good judgement and homely philosophy, to be administered in sympathy and kindness." □

Social Security Opposed By State Physicians

A recent poll of the entire membership of the Oklahoma State Medical Association revealed that 74 per cent of the respondents were opposed to compulsory coverage of physicians under the Social Security Act. Out of 1,254 replies, 925 voted against social security coverage and 312 indicated they favored participation. There were 17 who expressed insufficient knowledge to make a decision.

The poll was taken at the request of the American Medical Association's Socio-Economic Division, which is reappraising the AMA's stand on the controversial issue. OSMA's Board of Trustees approved the statewide vote at its last meeting on September 15th.

The strong position taken by OSMA members against the measure is in contrast to an apparent trend in other state medical societies to relax their opposition to the government retirement program. More and more physicians are apparently subscribing to the viewpoint of joining a movement which has swept almost every other profession and business into the fold.

Originally, the Social Security Act was designed to compel the *employed* worker to put aside a certain amount of his earnings for his old age, but the philosophy of the law and its application to the public have been substantially changed since then. At the present time, the law provides for the compulsory coverage of farmers and most professional people. The only significant exceptions are physicians and federal employees (who have their own retirement program.) □

NOW LEASING

Space in medical and dental building — one and one-half blocks from Midwest City Memorial Hospital.

Contact
Tom H. Murdoch, D.D.S.
312 South Midwest Blvd.,
Midwest City
PE 2-3111 or PE 2-7105

State GP's to Meet in February

Oklahoma's Chapter of the American Academy of General Practice will hold its 1963 Annual Meeting at the Sheraton-Oklahoma Hotel in Oklahoma City on February 4th and 5th.

According to Program Chairman, M. Joe Crosthwait, M.D., Oklahoma City, an outstanding scientific program has been planned. Six speakers from diversified fields of medicine will appear before the group.

Thirty-nine technical exhibitors will open their booths at 8:00 a.m. on Monday, February 4th for the two-day event and the formal scientific portion of the program will begin at 9:00 a.m.

Speakers Named

Ralph L. Byron, Jr., M.D., Chief of Oncologic and General Surgery, City of Hope Medical Center, Duarte, California will speak on "Ways of Making Cancer Chemotherapy More Effective" and "The Total Care of the Cancer Patient." Bruce V. MacFayden, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Hahneman Medical College, Philadelphia, Pennsylvania will present "Peri-menopausal Bleeding—Its Significance and Treatment" and "Uterine Displacements — Their Importance, Differential Diagnosis and Treatment." Assistant Professor of Medicine at the University of Kansas Medical School, William E. Larson, M.D., will talk on "Blood Transfusion Reactions—Prevention, Recognition and Management" and "Know your Anemias and How to Treat Them."

Ralph Blocksma, M.D., Senior Consultant in Plastic Surgery at Butterworth Hospital in Grand Rapids, Michigan will present "Progress in the Surgical Treatment of Severe Burns" and "Surgical Repair in Severe Hand and Forearm Injuries." Speaking on "The Treatment of Anxiety" and "Adolescent Psychiatry" will be Orville S. Walters, M.D., Director of Health Services at the University of Illinois, Chicago. "Diagnosis and Management of Glomerular Nephritis" and "Electrolyte Imbalance in the Infant — Causes and Management" will be discussed by C. W. Daeschner, Jr., M.D., Professor and Chairman of the Department of Pediatrics at the University of Texas Medical Branch, Galveston, Texas.

Special entertainment is being planned for wives of physicians attending the meeting.

Eight hours credit, Category 1, has been approved by the AAGP. □

Regional Postgraduate Courses Announced

R. R. Hannas, M.D., Chairman of the Oklahoma State Medical Association's Council on Professional Education, has announced eight regional postgraduate refresher courses for the Winter and Spring of 1963.

Following the format established the past two years, each conference will feature three hours of lecture, one hour of discussion, and a dinner half way through the program. The meetings, which will be held at decentralized sites across the state, will begin at 4:30 p.m. and conclude around 9:30 p.m.

Members of the Oklahoma University Medical Center faculty will present programs on four subjects, each designed to be a general-interest presentation on a given organ system.

Tuition for the courses is $7.50 each, which also includes the dinner. Four hours of Category I credit for each subject is granted by the American Academy of General Practice.

Sites and Subjects

Below are the eight locations of the courses, as well as subject matter. Physicians in the vicinity of the meeting sites will be sent programs and may register by mail.

Ponca City—"The Pancreas

McAlester—"The Heart"

Lawton—"The Brain"

Shawnee—"The Liver"

Woodward—"The Heart"

Durant—"The Liver"

Clinton-Sherman AFB—"The Pancreas"

Stillwater—"The Brain" □

. . . AND WE'LL KEEP THEM HEALTHY ALL SUMMER!

KANAKUK for Boys KAMP

36TH YEAR

- Coaching, competing, and conditioning in all sports.
- White and Buffalo River canoe trips.
- Swimming, diving, water skiing, Scuba diving.
- Riflery, archery and fishing.

IN THE HEART OF THE OZARKS
ON LAKE TANEYCOMO
BRANSON, MISSOURI

KANAKOMO for Girls KAMP

5TH YEAR

- Instruction and play in land sports.
- River and lake canoe trips.
- Art, dance, and crafts.
- Swimming and water skiing.
- Riflery and archery.
- Drama, Poise and Charm.

TWO FIVE WEEK TERMS
Ages: 8 thru 16

Write for catalog, movie dates, and list of Oklahoma Patrons:

Winter Address
C. G. "SPIKE" WHITE
702 Thomas Lane
College Station, Texas

AMA Meets

(Continued from Page 497)

The House, by a vote of 130 to 48, adopted changes in the Constitution and Bylaws which would have implemented the June, 1962, recommendations of the Ad Hoc Committee on the Board of Trustees, including expansion of the Board from 11 to 15 members. However, the Judicial Council later informed the House that the affirmative votes necessary to amend the Constitution should have totalled at least 144, or two-thirds of the 216 voting delegates registered at the Wednesday session. The House then adopted a motion to vote on the proposed Constitutional amendments, in accord with the changes made in the Bylaws, at the opening session of the June, 1963, meeting.

Miscellaneous Actions

In considering a wide variety of resolutions and annual and supplementary reports, the House also:

- Urged state and county medical societies to continue promoting the aggressive, consistent development of **Blue Shield** senior citizen programs.
- Encouraged medical societies and physicians to provide cooperation and leadership in the formulation and operation of regional **hospital planning** bodies.
- Warned against the dangerously low level of immunization for **smallpox.**
- Pointed out that state and county medical societies should collaborate with departments of **public health** in the interest of community health, always keeping in mind the need for a proper balance between local public health programs and the private practice of medicine.
- Instructed the Board of Trustees to study the feasibility of **regional clinical sessions,** taking into consideration the already established regional meetings of medical specialty groups and the Academy of General Practice. □

DEATHS

L. D. HUDSON, M.D.

1882-1962

A pioneer Dewey physician, L. D. Hudson, M.D., died October 16, 1962.

A native of Alabama, Doctor Hudson graduated from the University of Nashville Medical Department in 1909 and established his practice in Nashville. In 1914, he moved to Dewey where he practiced medicine until his retirement in 1957.

Active in many civic organizations, Doctor Hudson held lifetime memberships in the Kiwanis Club and the Masconic Lodge. At one time he served as governor of the Oklahoma-Texas District of the Kiwanis. In addition to his private practice, he maintained a keen interest in all medical activities, having been president of the Washington-Nowata County Medical Society.

In 1960, recognizing his years of devoted service to his community and profession, the Oklahoma State Medical Association awarded Doctor Hudson an Honorary-Life Membership.

OSCAR H. MILLER, M.D.

1900-1962

Oscar H. Miller, M.D., 62-year-old obstetrician and gynecologist, died November 13, 1962 in Oklahoma City.

A native of Iowa, Doctor Miller graduated from the Indiana University School of Medicine in 1925 and continued his postgraduate work at the University of Vienna, Austria and Washington University in St. Louis.

He entered practice in Esterville, Iowa and during World War II, served as captain in the navy. In 1946 Doctor Miller established his practice in Oklahoma City. □

BOOK REVIEWS

REVIEW OF CIBA FOUNDATION SYMPOSIUM: TUMOR VIRUSES OF MURINE ORIGIN, Edited by G. E. W. Wolstenholme and Maeve O'Connor, Little, Brown, and Company, Boston, Publishers, 1962, $10.75.

This book consists of seventeen papers and group discussions presented at a symposium held at Perugia University, Italy, on June 21-23, 1961, under the auspices of the Ciba Foundation.

Such topics as morphology, assay, histopathology, ecology, and identification of tumour viruses, and the role of viruses in the etiology of carcinogenesis are presented.

As could be expected from such a convocation of the world's leading authorities in the chaotic field of tumor viruses, many perplexing and controversial aspects of the relationships of viruses and tumors are brilliantly discussed and some crystallization of current trends of thought is apparent.

This book does not provide light reading material, both because of the sophisticated level of the papers and discussions and because of the difficulty of maintaining continuity between the independently presented contributions. Continuity is, however, partially maintained by the group discussions (which are fully as informative and thought-provoking as the formally presented papers).

The electron micrographs which are included in the publication are particularly excellent and deserve specific comment.—*E. C. Bracken, Ph.D.*

PREVENTIVE MEDICINE IN WORLD WAR II, VOLUME V: COMMUNICABLE DISEASE, Editor-in-Chief, Col. J. B. Coates, Jr., MC, Office of the Surgeon General, Department of the Army, Washington, D.C., 1960.

This volume on communicable diseases deals with diseases transmitted through contact or through unknown means. It is the second volume dealing with communicable diseases, the fourth in the preventive medicine series and the sixteenth published in the total series dealing with the history of the United States Army Medical Department in World War II.

Volume IV dealt with communicable diseases transmitted through the respiratory and alimentary tracts and the forthcoming third volume on communicable diseases will be concerned with arthropod-borne diseases. This volume, which contains 17 chapters written by 27 authors maintains the high standards of previous publications in this series. It treats comprehensively a variety of diseases from those accompanied by a minimal mortality but a tremendous loss of man-days such as fungus skin infections and epidemic kerato-conjunctivitis to life threatening infections such as hepatitis which was considered to be the most unexpected and perhaps the most serious problem of all the diseases reviewed in this volume. There are chapters on hookworm, leprosy, leptospirosis, schistosomiasis, tularemia, yaws, Bullis fever, infectious mononucleosis, poliomyelitis, lmphyocytic choriomeningitis, Q fever and others.

The discussion of venereal diseases occupies the largest section. As stated in the foreword by Surgeon General Heaton, "In March, 1941, venereal disease was the greatest single cause of non effectiveness in the U.S. Army." There is an interesting chronologic review of the steps taken to control this problem in the various geographical theatres of operation. The authors feel that the most important step in the control of venereal disease in military troops was the policy initiated by Colonel Thomas B. Turner (Professor of Microbiology and Dean, Johns Hopkins University School of Medicine) and General Hugh J. Morgan (Professor of Medicine, Vanderbilt University School of Medicine) eliminating punishment to military personnel for acquiring a venereal disease. The importance of cooperative efforts between the military and such organizations as the American Social Hygiene Association and the Public Health Service is emphasized. The problems surrounding case finding, education of military personnel, including the need for different approaches with various racial groups, and the development of different methods of prophylaxis are reviewed in detail. Obviously a major problem was that of disease in civilian populations and regulation of prostitution in military locations, which in certain areas appeared to be almost insurmountable. For example, in 1944, 60 per cent of all women in Italy had some form of venereal disease and 95-100 per cent of all prostitutes revealed laboratory or clinical evidence of one or more venereal diseases.

This reviewer, as will other post World War II medical graduates, found interesting reading in the description of the military activities of certain of his instructors, of other physicians who later became famous names in American medicine and other personalities, i.e., Eliot Ness, director of The National Advisory Policy Committee, a group which worked closely with the military in controlling venereal disease in civilian populations. This volume clearly points up some of the reasons why the ratio of deaths from disease to deaths from combat injuries fell progressively from 5:1 in the Spanish-American War to 0.07:1 in World War II.

Harris D. Riley, Jr., M.D.

Miscellaneous Advertisements

FOR SALE: Practically new examining table, treatment table, instrument cabinet, scales, stool and spot light. Contact T. B. Collum, M.D., 208 Lenox Drive, Grandview Heights, Muskogee, Oklahoma.

FOR SALE Profexray X-ray, 100 millimeter, adjustable table, bucky diaphragm and fluoroscope. Contact J. E. Hollis, M.D., 108 West Eighth Avenue, Bristow, Oklahoma.

WANTED: Internist, Opthalmologist, Ob-Gyn, Urologist, board qualified or certified for practice with group in Western Oklahoma. One month annual vacation. Progressive pay scale. Contact Arthur Grayson, M.D., Medical Director, Community Hospital-Clinic, Elk City, Oklahoma.

WATONGA CLINIC, Watonga, Oklahoma (population 3,500) wants to add general practitioner to present four-physician group. Clinic building less than four years old. Guaranteed salary first year, with subsequent option to become partner. Cattle, agricultural economy. Large trade territory. Contact A. K. Cox, M.D.

WANTED medical doctor, fine opportunity for general practice in central Oklahoma town, 10,000 population in Tulsa area. Near lake, new hospital, new nursing home. Contact Key C, The Journal, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

PHYSICIAN, presently interning, desires Oklahoma location to establish private practice. Contact Earl B. Gehrt, M.D., Broadlawns Polk County Hospital, 18th and Hickman Road, Des Moines, Iowa.

BOARD ELIGIBLE Orthopedic Surgeon desires Oklahoma practice opportunity (group or associate). Age 32, graduate of St. Louis University, presently training at Henry Ford Hospital, Detroit, Michigan. Contact John A. Lynch, M.D., 17505 Stoepel, Detroit 21, Michigan. Available May 15, 1963.

FOR SALE: Pediatric practice in Ponca City, Oklahoma. Available immediately. Will introduce. Contact Tom D. Moore, M.D., 418 Community Building, Ponca City. Telephone ROgers 2-5611.

Index to Contents

The use of this Index will be greatly facilitated by remembering that articles are often listed under more than one heading. Scientific articles may be found under the name of the author and the name of the article as well as under listings of authors and Scientific Articles. Editorials and deaths are listed under the special headings as well as alphabetically.

January	1-38	July	259-318
February	39-70	August	319-352
March	71-108	September	353-400
April	109-184	October	401-436
May	185-228	November	437-472
June	229-258	December	473-516

Pages Included in Each Issue

(S)—Scientific	(BR)—Book Review
(E)—Editorial	(D)—Deaths
(SA)—Special Article	(PIC)—Picture
(MC)—Medical Center	(GN)—General News

Key to Abbreviations

—A—

Albers, Donald D., M.D., and Stephenson, Philip L., M.D., Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach (S) 77
Aldrich, Robert A., M.D. (Pic) 148
Allergic Reactions to Low Environmental Temperature, "Cold Allergy", Horowitz, Leon, M.D. (S) 82
Alumni Association Meets, Names Officers (GN) 36
AMA-Blue Shield Offer Insurance Plan (GN) 54
AMA-ERF (E) 437
AMA Meets in Los Angeles (GN) 496
AMA-NRC Adopt Policy On Drug Addiction (GN) 257
AMA Reorganizes AMEF (GN) 35
AMA Scientific Program Outlined (GN) 470
AMA Scientific Session to Review Problems of Teenagers (GN) 257
AMA To Meet in L.A. in November (GN) 432
American College of Surgeons to Convene in Phoenix (GN) 397
Annual Meeting Plans Underway (GN) 432

ANNUAL MEETING

Business (GN) 158
Committees (GN) 145
Delegates and Alternates (GN) 159
Digest of Events (GN) 146
Entertainment (GN) 157
Exhibits (GN) 155
Guest Speakers (GN) 148
Officers and Trustees (GN) 144
Program (GN) 151
Related Meetings (GN) 156
Woman's Auxiliary (GN) 171
Annual Meeting Features Americanism (GN) 65
Applanation Tonometry, Garnier, William H., M.D. (S) 421
Ariel, Irving M., M.D. (Pic) 148
Armstrong, Rev. Raymond A. (Pic) 148
Ashley, Robert E., M.D. (Pic) 469
Assistant Executive Secretary Hired (GN) 349
Association Hosts Student AMA at Annual Banquet (GN) 468
Atkins, Paul N., Jr., M.D. (Pic) 469
Atkins, Paul N., Sr., M.D. (Pic) 469
Auto Safety Belts: Kit for Community Wide Campaign (GN) 470
Auxiliary (GN) (January) lvii
Auxiliary (GN) (February) liii
Auxiliary (GN) (March) li
Auxiliary (GN) (April) xlv
Auxiliary (GN) (May) xlvii
Auxiliary (GN) (June) xliii
Auxiliary (GN) (July) xlv
Auxiliary (GN) (August) xli
Auxiliary (GN) (September) liii
Auxiliary (GN) (October) li
Auxiliary (GN) (November) lxiii
Auxiliary (Dec.) li

AUTHORS

Albers, Donald D., M.D., and Stephenson, Philip L., M.D., Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach (S) 77
Barney, J. A., M.D., and Williams, G. R., M.D., Isolated Aneurysms of the Iliac Arteries (S) 492
Bird, Byron, Blair, Joseph and Cooper, Donald L., M.D., Use of a Liquid Meal in a Football Training Program (S) 484
Blair, Joseph, Bird, Byron, and Cooper, Donald L., M.D., Use of a Liquid Meal in a Football Training Program (S) 484
Bobek, D. W., M.D., Hydrops of the Gallbladder in a Three-Year-Old Girl (S) 125
Brandt, Edward N., Jr., M.D., Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Brandt, Edward N., Jr., M.D., Shook, M. B., M.D. and Mannerberg, Frederick D., M.D., Cholesterol Pleural Effusion (S) 378
Brandt, Edward N., Jr., M.D., and Stephenson, Philip L., M.D., Tuberculosis of the Liver (S) 92

Branham, Donald W., M.D. and Emmott, Ralph C., M.D., Prostatic Surgery Mortality Related to Hemorrhage (S) 119
Brown, Forest R., M.D., Moseley, Kirk T., M.D., Lindeman, Robert D., M.D., and Bloss, Claude M., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Bloss, Claude M., M.D., Brown, Forest R., M.D., Moseley, Kirk T., M.D., and Lindeman, Robert D., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Boland, John L., Ph.D., George, W. M., M.A., M.D., Hayes, Harrison, M.D., and Rothenberger, Monty, M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384
Campbell, Gilbert S., M.D., Gosser, Robert L., M.D., Cayler, Glen G., M.D., and Williams, G. Rainey, M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Campbell, Gilbert S., M.D., Heart Page 334
Carey, John M., M.D., Heart Page (S) 90
Cayler, Glen G., M.D., Williams, G. Rainey, M.D., Campbell, Gilbert S., M.D., and Gosser, Robert L., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Chaitin, Horace and Malek, Hadi., M.D., Congenital Diaphragmatic Hernia (S) 28
Chapman, Carleton B., M.D., On the Nature of Progress (S) 278
Conrad, Loyal L., M.D., Heart Page 417
Conrad, Loyal L., M.D., Long Term Anticoagulant Therapy in Myocardial Infarction (S) 49
Cook, Charles E., Jr., M.D., Report on a Case of Macroglobulinemia and Cryoglobulinemia (S) 412
Cooper, Donald L., M.D., Bird, Byron and Blair, Joseph, Use of a Liquid Meal in Football Training Program (S) 484
Craighead, Claude C., M.D., Surgical Treatment of the Diseases of the Thyroid (S) 355
Cummings, Richard, M.D., and Rigual, Rafael, M.D., Intratemporal Facial Nerve Palsy (S) 4
Dawson, C. B., M.D., and Emmott, Ralph C., M.D., Ectopic Ureteral Orifice, A Case Report (S) 188
Deardorff, Max, M.D., and Riley, Harris D., Jr., M.D., Salmonella Meningitis (S) 10
Donnell, John J., M.D., The Use of Anticoagulants in Impending Myocardial Infarction (S) 58
Emmott, Ralph C., M.D., and Branham, Donald W., M.D., Prostatic Surgery Mortality Related to Hemorrhage (S) 119
Emmott, Ralph C., M.D., and Dawson, C. B., M.D., Ectopic Ureteral Orifice, A Case Report (S) 188
Everett, Mark Allen, M.D., and Garner, James, A Histochemical Study of Vitiligo (S) 489
Everett, Mark Allen, M.D., and Smith, Edward, M.D., Keratinization: A Review (S) 459
Ewing, William F., M.D., The Case Against Anticoagulation in Coronary Insufficiency (S) 61
Felton, Warren L., II, M.D., and Miller, Jess E., M.D., Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney (S) 480
Felton, Warren L., II, M.D., and Russell, Henry T., M.D., Primary Lymphoma of the Lung (S) 263
Forester, Virgil Ray, M.D., Fiber Optics (S) 87
Frank, Gael R., M.D., Synder, David D., M.D., O'Donoghue, Don, M.D., and Williams, G. Rainey, M.D., Management of Traumatic Amputations (S) 419
Franken, E. A., Jr., M.D., Tuberous Sclerosis: Report of A Case With Brief Review of the Literature (S) 330
Freed, Leon C., M.D., A Brief Critique (S) 63
Freed, Leon C., M.D., The Truth 139
Garner, James, and Everett, Mark Allen, M.D., A Histochemical Study of Vitiligo (S) 489
Garnier, William H., M.D., Applanation Tonometry (S) 421
George, W. M., M.A., M.D., Hayes, Harrison, M.D., Rothenberger, Monty, M.D., and Boland, John L., Ph.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384
Goetzinger, B. R., M.D., Welt, Peter J. L., M.D., and Massion, Walter H., M.D., Preliminary Observations on Methoxyflurane (S) 202
Gosser, Robert L., M.D., Cayler, Glen G., M.D., Williams, G. Rainey, M.D., and Campbell, Gilbert S., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Greer, Allen E., M.D., Heart Page (S) 90
Hackney, John L., M.D., Persistent Patent Ductus Arteriosus in An Adult—A Case Report (S) 327
Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., The Biostatistical Unit of the Department of Preventive Medicine and Public Health (S) 218
Hagans, James A., M.D., Ph.D., Schottstaedt, William W., M.D., and Brandt, Edward N., Jr., M.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., Computers in Modern Medicine (S) 96
Hammarsten, James F., M.D., Smith, William L., M.D., and Kyriakopoulos, Adrian A., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248
Hannas, Ralston R., M.D., The Case Against Using Anticoagulants Following Acute Myocardial Infarction (S) 43
Hayes, Harrison, M. D., Rothenberger, Monty, M.D., Boland, John L., Ph.D., and George, E.M., M.A., M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries. (S) 384

Honick, Gerald L., M.D., The Case For Using Anticoagulants Following Acute Myocardial Infarction (S) 40

Horowitz, Leon, M.D., Allergic Reactions to Low Environmental Temperature, "Cold Allergy," (S) 82

Hughes, William E., M.D., (Edited by) Medical Grand Rounds (S) 336

Keele, Doman K., M.D., Problems in the Diagnosis and Treatment of Hypothyroidism in Children (S) 112

Kent, Bartis M., M.D., and McGraw, Willard L., M.D., Myotonica Dystrophia (S) 237

Kyriacopoulos, John, M.D., and Smith, William O., M.D., Intravenous Hypertonic Urea As A Diuretic Agent (S) 210

Kyriakopoulos, Adrian A., M.D., Hammarsten, James F., M.D., and Smith, William L., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248

Lindeman, Robert D., M.D., Bloss, Claude M., M.D., Brown, Forest R., M.D., and Moseley, Kirk T., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365

Lupas, John A., M.D., Severe Drug Reaction with Bone Marrow Depression Due to Mesantoin (S) 409

Lynn, Thomas N., M.D., Heart Page 246

Lynn, Thomas N., Jr., M.D., The Cases for and Against Anticoagulants in Coronary Heart Disease (S) 39

Lynn, Thomas N., M.D., Electrocardiographic Abnormalities in Congenital Heart Disease: QRS and T (S) 130

McCollum, W. T., M.D., F.A.C.P., Long Term Oral Anticoagulants in Myocardial Infarction (S) 46

McGraw, Willard L., M.D., and Kent, Bartis M., M.D., Myotonica Dystrophia (S) 237

Maguire, Philip J., M.D., Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy (S) 123

Malek, Hadi, M.D. and Chaitin, Horace, Congenital Diaphragmatic Hernia (S) 28

Mankin, Haven, M.D., Cervical Angiography (S) 360

Mannerberg, Frederick D., M.D., Brandt, Edward N., Jr., M.D., and Shook, M.B., M.D., Cholesterol Pleural Effusion (S) 378

Massion, Walter H., M.D., Goetzinger, B.R., M.D., and Welt, Peter J.L., M.D., Preliminary Observations on Methoxyflurane (S) 202

Mays, James Earnest Jr., M.D., Infantile Diarrhea Due to Enteropathogenic Escherichia Coli (S) 476

Miller, Jess E., M.D., and Felton, Warren L., II, M.D., Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney (S) 480

Moseley, Kirk T., M.D., Lindeman, Robert D., M.D., Bloss, Claude M., M.D., and Brown, Forest R., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365

Nakano, Jiro, M.D., Cardiovascular Dynamics of Tachycardia (S) 439

Nicholson, Ben H., M.D., and Nicholson, John F., M.D., Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism (S) 234

Nicholson, John F., M.D., and Nicholson, Ben H., M.D., Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism (S) 234

Nienhuis, Lester I., M.D., F.A.C.S., Fluid and Electrolyte Balance Clinical Case Analysis (S) 79

Norwood, O'Tar, M.D., Cryotherapy: A Review and Evaluation (S) 424

O'Donoghue, Don, M.D., Williams, G. Rainey, M.D., Frank, Gael R., M.D., and Snyder, David D., M.D., Management of Traumatic Amputations (S) 419

Pierce, Alexander W. Jr., M.D., Review: The Nephrotic Syndrome in Childhood with Special Reference to Management (S) 454

Pruitt, Francis W., M.D., F.A.C.P., Heart Page 31

Richardson, Sylvia O., M.D., and Riley, Harris D. Jr., M.D., Comprehensive Management of Mental Retardation: Description of One Approach to the Problem (S) 267

Rigual, Rafael, M.D., and Cummings, Richard, M.D., Intratemporal Facial Nerve Palsy (S) 4

Riley, Harris D., Jr., M.D., and Richardson, Sylvia O., M.D., Comprehensive Management of Mental Retardation: Description of One Approach to the Problem (S) 267

Riley, Harris D., Jr., M.D., and Deardorff, Max, M.D., Salmonella Meningitis (S) 10

Riley, Harris D., Jr., M.D., et al, Cystic Fibrosis of the Pancreas (S) 191

Ritan, John L., M.D., Carcinoma of the Maxillary Antrum (S) 23

Robards, Victor L., Jr., M.D., Traumatic Arteriovenous Fistula of Thirty-seven Years Duration (S) 324

Robbins, Galen P., M.D., Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris, Robbins, Galen P., M.D. (S) 51

Rothenberger, Monty, M.D., Boland, John L., Ph.D., George, W. M., M.A., M.D., and Hayes, Harrison, M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384

Rucks, W.W., Jr., M.D., The Case Against the Use of Anticoagulation in Angina Pectoris (S) 55

Russell, Henry T., M.D., and Felton, Warren L., II, M.D., Primary Lymphoma of the Lung (S) 263

Russell, Henry T., M.D., Pathology (BR) 226

Schottstaedt, William W., M.D., and Hagans, James A., M.D., Ph.D. Computers in Modern Medicine (S) 96

Schottstaedt, William W., M.D., Brandt, Edward N., Jr., M.D., and Hagans, James A., M.D., Ph.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Schottstaedt, William W., M.D., and Hagans, James A., M.D., Ph.D., The Biostatistical Unit of the Department of Preventive Medicine and Public Health (S) 218
Schottstaedt, William W., M.D., Heart Page 208
Shook, M.B., M.D., Mannerberg, Frederick, D., M.D., and Brandt, Edward N., Jr., M.D., Cholesterol Pleural Effusion (S) 378
Simon, Jimmy L., M.D., A Review: Chorea, A Symptom Complex (S) 19
Smith, Edward, M.D., and Everett, Mark Allen, M.D., Keratinization: A Review (S) 459
Smith, William O., M.D., and Kyriacopoulos, John, M.D., Intravenous Hypertonic Urea As A Diuretic Agent (S) 210
Smith, William L., M.D., Kyriakopoulos, Adrian A., M.D., and Hammarsten, James F., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248
Snelson, Paul A., Regional and Community Planning for Health Facilities (S) 240
Snyder, David D., M.D., O'Donoghue, Don, M.D., Williams, G. Rainey, M.D., and Frank, Gael R., M.D., Management of Traumatic Amputations (S) 419
Stephenson, Philip L., M.D., and Albers, Donald D., M.D. Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach (S) 77
Stephenson, Philip L., M.D., and Brandt, Edward N., Jr., M.D., Tuberculosis of the Liver (S) 92
Thompson, Stephen W., M.D., Heart Page 128
Walker, Ethan A., Jr., M.D., F.A.C.S., Tympanoplasty by Free Vein Graft, A Preliminary Report of Sixty Cases (S) 404
Welt, Peter J. L., M.D., Massion, Walter H., M.D. and Goetzinger, B.R., M.D., Preliminary Observations on Methoxyflurane (S) 202
Williams, G. Rainey, M.D., Campbell, Gilbert S., M.D., Gosser, Robert L., M.D., and Cayler, Glen G., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Williams, G. R., M.D., and Barney, J. A., M.D., Isolated Aneurysms of the Iliac Arteries (S) 492
Williams, G. Rainey, M.D., Frank, Gael R., M.D., Snyder, David D., M.D., and O'Donoghue, Don, M.D., Management of Traumatic Amputations (S) 419
Zuhdi, Nazih, M.D. Heart Page (S) 90

—B—

Bankers Service Life Indicts M.D's, Hospitals (GN) 107
Barney, J. A., M.D., and Williams, G. R., M.D., Isolated Aneurysms of the Iliac Arteries (S) 492
Bennett, Charles L., (Pic) 428
Berg, Mrs. Milton L. (Pic) 171
The Biostatistical Unit of the Department of Preventive Medicine and Public Health, Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., (S) 218
Bird, Byron, Blair, Joseph, and Cooper, Donald L., M.D., Use of a Liquid Meal in a Football Training Program (S) 484
Blair, Joseph, Bird, Byron, and Cooper, Donald L., M.D., Use of a Liquid Meal in a Football Training Program (S) 484
Bloss, Claude M., M.D., Brown, Forest R., M.D., Moseley, Kirk T., M.D., and Lindeman, Robert D., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Blue Shield Plan for the Elderly (E) 73
Bobek, D. W., M.D., Hydrops of the Gallbladder in a Three-Year-Old Girl (S) 125
Bogan, Robert J., M.D., (D) 70
Boland, John L., Ph.D, George, W.M., M.A., M.D., Hayes, Harrison, M.D., and Rothenberger, Monty, M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384
Brandt, Edward N., Jr., M.D., Shook, M.B., M.D. and Mannerberg, Frederick, D., M.D., Cholesterol Pleural Effusion (S) 378
Brown, Forest R., M.D., Moseley, Kirk T., M.D., Lindeman, Robert D., M.D., and Bloss, Claude M., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Burton, John F., M.D. (Pic) 256
Brandt, Edward N., Jr., M.D., Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Brandt, Edward N., Jr., M.D., and Stephenson, Philip L., M.D. Tuberculosis of the Liver (S) 92
Branham, Donald W., M.D., and Emmott, Ralph C., M.D., Prostatic Surgery Mortality Related to Hemorrhage (S) 119
Bret, William N., Jr., LL.B. (Pic) 148
A Brief Critique, Freed, Leon C., M.D. (S) 63
Business (Annual Meeting) (GN) 158

BOOK REVIEWS

Pathology 226
Dr. Mary Walker 399
Financing Medical Care 399

—C—

C. B. Dawson, M.D., Editor-in-Chief (E) 230
Campbell, Gilbert S., M.D., Gosser, Robert L., M.D., Cayler, Glen G., M.D., and Williams, G. Rainey, M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Campbell, Gilbert S., M.D., Heart Page 334

Cardiovascular Dynamics of Tachycardia, Nakano, Jiro, M.D. (S) 439
Carey, John M., M.D. Heart Page (S) 90
Carlock, J. Hoyle, M.D., (Pic) 144
Carlock, J. Hoyle, M.D. (Pic) 255
Carlock, J. Hoyle, M.D. (Pic) 256
Carnegie Needs GP (GN) 256
The Case Against Anticoagulation in Coronary Insufficiency, Ewing, William F., M.D. (S) 61
The Case Against the Use of Anticoagulation in Angina Pectoris, Rucks, W. W., Jr., M.D. (S) 55
The Case Against Using Anticoagulants Following Acute Myocardial Infarction, Ralston R. Hannas, M.D. (S) 43
The Case For Using Anticoagulants Following Acute Myocardial Infarction, Honick, Gerald L., M.D. (S) 40
The Cases for and Against Anticoagulants in Coronary Heart Disease, Lynn, Thomas N., Jr., M.D. (S) 39
Carcinoma of the Maxillary Antrum, Ritan, John L., M.D. (S) 23
Carl Puckett Memorial Lecture Planned (GN) 36
Cayler, Glen G., M.D., Williams, G. Rainey, M.D., Campbell, Gilbert S., M.D., and Gosser, Robert L., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Cervical Angiography, Mankin, Haven, M.D. (S) 360
CD Health Mobilization Course Scholarships—March 28-30 (GN) 105
Chaitin, Horace and Malek, Hadi, M.D., Congenital Diaphragmatic Hernia (S) 28
Chapman, Carleton B., M.D., On the Nature of Progress (S) 278
Chest Physicians on Cigarette Smoking (E) 437
Children's Teeth (E) 2
Cholesterol Pleural Effusion, Mannerberg, Frederick D., M.D., Brandt, Edward N., Jr., M.D., and Shook, M.B., M.D., (S) 378
Climax on King-Anderson Bill (GN) 253
College of Surgeons Slates Clinical Meeting In Tulsa (GN) 35
Committees (Annual Meeting) (GN) 145
Committee Studies Insurance Trust for the Aged (GN) 498
Comprehensive Management of Mental Retardation: Description of One Approach to the Problem, Richardson, Sylvia O., M.D., and Riley, Harris D., Jr., M.D. (S) 267
The Computer As A Diagnostic Aid in Medicine, Brandt, Edward N., Jr., M.D., Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D. (S) 213
Computers in Modern Medicine, Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., (S) 96
Conference of Medical Society Officers Announced (GN) 428
Conference on Medical Education Held by OSMA Committee (GN) 224
Congenital Diaphragmatic Hernia, Malek, Hadi, M.D. and Chaitin, Horace, M.D. (S) 28
Congress Concedes Tax Equity for Pension Plans of the Self-Employed (GN) 465
Conrad, Loyal L., M.D., Heart Page 417
Conrad, Loyal L., M.D., Long Term Anticoagulant Therapy in Myocardial Infarction (S) 49
Cook, Charles E., Jr., M.D., Report on a Case of Macroglobulinemia and Cryoglobulinemia (S) 412
Cooper, Donald L., M.D., Bird, Byron and Blair, Joseph, Use of a Liquid Meal in a Football Training Program (S) 484
Counties Asked to Participate in PR, Legislative Projects (GN) 496
County Leaders Asked to Spearhead C.D. Program (GN) 34
County Officers Conference Attracts Sixty Participants (GN) 467
County Officer's Conference Planned (GN) 398
Craighead, Claude C., M.D. (Pic) 33
Craighead, Claude C., M.D. (Pic) 148
Craighead, Claude C., M.D., Surgical Treatment of the Diseases of the Thyroid (S) 355
Cryotherapy: A Review and Evaluation, Norwood, O'Tar, M.D. (S) 424
Cystic Fibrosis of the Pancreas, Riley, Harris D., Jr., M.D., et al (S) 191

—D—

Dawson, C.B., M.D., and Emmott, Ralph C., M.D., Ectopic Ureteral Orifice, A Case Report (S) 188
Deardorff, Max, M.D., and Riley, Harris D., Jr., M.D., Salmonella Meningitis (S) 10
Delegates and Alternates (Annual Meeting) (GN) 159
Devine, J.C., M.D., (Pic) 469
Diabetes Week: November 11-17 (GN) 433
Digest of Events (Annual Meeting) (GN) 146
Doctors Attack Polio (GN) 258
Doctor Hart Conducts Attitude Survey (GN) 398
Dr. Mary Walker (BR) 399
Donnell, John J., M.D., The Use of Anticoagulants in Impending Myocardial Infarction (S) 53
Don't You Believe It (E) 71
DuVal, Merlin K., M.D., (Pic) 286

DEATHS

Deaths (GN) 108
Deaths (GN) xix
Death (GN) 351
Bogan, Robert J., M.D., (GN) 70
Frierson, S.E., M.D. (GN) 70
Graening, P. K., M.D. (GN) 70
Hudson, L. D., M.D. 502
Kernodle, Stratton E., M.D. (GN) 70
Martin, Joseph T., M.D. (GN) 435
Miller, Oscar H., M.D. 502
Stanbro, Gregory E., M.D. (GN) 435
Sugg, Alfred R., M.D. (GN) 70
Wainwright, Tom L., M.D. (GN) 435
Woodward, Neil W., M.D. (GN) 351

—E—

Ectopic Ureteral Orifice, A Case Report, Dawson, C.B., M.D., and Emmott, Ralph C., M.D. (S) 188
The Edge of Indigence (E) 353
Electrocardiographic Abnormalities in Congenital Heart Disease: QRS and T, Lynn, Thomas N., M.D. (S) 130
Emmott, Ralph C., M.D., and Branham, Donald W., M.D., Prostatic Surgery Mortality Related to Hemorrhage (S) 119
Emmott, Ralph C., M.D., and Dawson, C.B., M.D. Ectopic Ureteral Orifice, A Case Report (S) 188
Entertainment (Annual Meeting) (GN) 157
Everett, Mark Allen, M.D., and Garner, James, A Histochemical Study of Vitiligo (S) 489
Everett, Mark Allen, M.D. and Smith, Edward, M.D., Keratinization: A Review (S) 459
Ewing, Finis W., M.D. (Pic) 256
Ewing, William F., M.D., The Case Against Anticoagulation in Coronary Insufficiency (S) 61
The Executive Secretary (E) 231
Exhibits (Annual Meeting) (GN) 155

EDITORIALS

AMA-ERF 437
Blue Shield Plan for the Elderly 73
C. B. Dawson, M.D., Editor-in-Chief 230
Chest Physicians on Cigarette Smoking 437
Children's Teeth 2
Don't You Believe It 71
The Edge of Indigence 353
The Executive Secretary 231
The Faculty House 320
The House of Delegates 473
Inaugural Address 259
Is Papillary Adenocarcinoma of the Thyroid Really a Cancer? 185
It's the Voter's Choice 402
Mass Immunization 401
1962-Legislative Target Year! 1
The Medical Center Section 110
The Medical Profession and Public Opinion 259
The People 229
Poliomyelitis Vaccines 1
Practical Applications for Postgraduate Education 74
President's Page 3
President's Page 76
President's Page 111
President's Page 187
President's Page 232
President's Page 262
President's Page 323
President's Page 354
President's Page 403
President's Page 438
President's Page 475
A Proposal For Socialized Groceries 320
Representation? A Note to Those Not Present 473
The Role of Blue Cross in Financing Hospital Care of Older Persons 109
A Standing Ovation for Doctor Ben Nicholson 319
Who Can Tell? 473

—F—

The Faculty House (E) 320
Felton, Warren L., II, M.D., and Miller, Jess E., M.D., Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney (S) 480
Felton, Warren L., II, M.D., and Russell, Henry T., M.D., Primary Lymphoma of the Lung (S) 263
Ferguson, James H., M.D. (Pic) 33
Ferguson, James H., M.D. (Pic) 148
Fiber Optics, Forester, Virgil Ray, M.D. (S) 87
15,000 Attend AMA Meeting (GN) 292
Financing Medical Care (BR) 399
Fite, Mrs. W. Pat (Pic) 171
Five O.U. Freshman Receive OSMA Scholarship Awards (GN) 394
Flack, F.L., M.D. (Pic) 226
Fluid and Electrolyte Balance Clinical Case Analysis, Nienhuis, Lester I., M.D., F.A.C.S. (S) 79
Foliart, James D., LL.B. (Pic) 148
Forester, Virgil Ray, M.D., Fiber Optics (S) 87
Foster, Mrs. C. F., Jr. (Pic) 171
Frank, Gael R., M.D., Snyder, David D., M.D., O'Donoghue, Don, M.D., and Williams, G. Rainey, M.D., Management of Traumatic Amputations (S) 419
Frank, Mrs. Louis S. (Pic) 171
Franken, E. A., Jr., M.D., Tuberous Sclerosis: Report of A Case With Brief Review of the Literature (S) 330
Freed, Leon C., M.D., A Brief Critique (S) 63
Freed, Leon C., M.D., The Truth 139
Freeman, Richard J., M.D. (Pic) 469
Frierson, S. E., M.D. (D) 70

—G—

Gallaher, Clinton, M.D. (Pic) 144, 256
Garner, James, and Everett, Mark Allen, M.D., A Histochemical Study of Vitiligo (S) 489
Garnier, William H., M.D., Applanation Tonometry (S) 421
Garrison, George H., M.D. (Pic) 256
George, W. M., M.A., M.D., Hayes, Harrison, M.D., Rothenberger, Monty, M.D., Boland, John L., Ph.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384
The Goals of OSMA (GN) 288
Goetzinger, B. R., M.D., Welt, Peter J. L., M.D., and Massion, Walter H., M.D., Preliminary Observations on Methoxyflurane (S) 202
Goldman, Alfred, M.D. (Pic) 148
Goodwin, R. Q., M.D. (Pic) 256
Goodwin, Willard E., M.D. (Pic) 148
Gosser, Robert L., M.D., Cayler, Glen G., M.D., Williams, G. Rainey, M.D., and Campbell, Gilbert S., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272

GP's to meet in Tulsa (GN) 36
Graening, P. K., M.D. (D) 70
Greer, Allen E., M.D., Heart Page 90
Gross, Worth M., M.D. (Pic) 469
Grove Physician Practices 61 Years (GN) 500
Guest Speakers (Annual Meeting) (GN) 148
Gwartner, Warren G., M.D. (Pic) 469
Gwin, Edward IV (Pic) 394

—H—

Hackney, John L., M.D., Persistent Patent Ductus Arteriosus in An Adult—A Case Report (S) 327
Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., Computers in Modern Medicine (S) 96
Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D., The Biostatistical Unit of the Department of Preventive Medicine and Public Health (S) 218
Hagans, James A., M.D., Ph.D., Schottstaedt, William W., M.D., and Brandt, Edward N., Jr., M.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Hammarsten, James F., M.D., Smith, William L., M.D. and Kyriakopoulos, Adrian A., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248
Hannas, Ralston R., M.D., The Case Against Using Anticoagulants Following Acute Myocardial Infarction (S) 43
Hayes, Harrison, M.D., Rothenberger, Monty, M.D., Boland, John L., Ph.D., and George, E. M., M.A., M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head injuries (S) 384
Heart Page, Campbell, Gilbert S., M.D. 334
Heart Page, Cayler, Glen G., M.D. 276
Heart Page, Conrad, Loyal L., M.D. 417
Heart Page, Cooke, C. Robert, M.D. 376
Heart Page, Jaques, William E., M.D. 487
Heart Page, Lynn, Thomas N., M.D. 246
Heart Page, Pruitt, Francis W., M.D., F.A.C.P. 31
Heart Page, Thompson, Stephen W., M.D. 128
Heart Page, Schottstaedt, William W., M.D. 208
Heart Page, Simon, Jimmy L., M.D. 452
Heart Page, Zuhdi, Nazih, M.D., Carey, John M., M.D., and Greer, Allen E., M.D. (S) 90
Heavner, Lynn, M.D. (Pic) 469
Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism, Nicholson, John F., M.D., and Nicholson, Ben H., M.D. (S) 234
Hill-Burton Report (GN) 351
A Histochemical Study of Vitiligo, Garner, James, and Everett, Mark Allen, M.D. (S) 489
Hollis, J. E., M.D. (Pic) 69
Honick, Gerald L., M.D., The Case For Using Anticoagulants Following Acute Myocardial Infarction (S) 40
Horowitz, Leon, M.D., Allergic Reactions to Low Environmental Temperature, "Cold Allergy," (S) 82
The House of Delegates (E) 473
House of Delegates Fails to Achieve Quorum (GN) 498
House of Delegates Meeting Called (GN) 468
Howard, Ernest B., M.D. (Pic) 428
Huckabay, B. M., M.D., (Pic) 69
Hudson, L. D., M.D. (D) 502
Hughes, William E., M.D. (Edited by) Medical Grand Rounds (S) 336
Hustead, Robert F., M.D. (Pic) 149
Hyde, W. A., M.D. (Pic) 70
Hydrops of the Gallbladder in a Three-Year-Old Girl, Bobek, D. W., M.D. (S) 125

—I—

Immunization Education Campaign Set for April (GN) 468
Inaugural Address (E) 259
Index 496
Infantile Diarrhea Due to Enteropathogenic Escherichia Coli, Mays, James Earnest Jr., M.D. (S) 476
Intratemporal Facial Nerve Palsy, Rigual, Rafael, M.D., and Cummings, Richard, M.D. (S) 4
Intravenous Hypertonic Urea As A Diuretic Agent, Smith, William O., M.D., and Kyriacopoulos, John, M.D. (S) 210
'Investment Planning' Topic for Annual Meeting (GN) 104
Is Papillary Adenocarcinoma of the Thyroid Really a Cancer? (E) 185
Isolated Aneurysms of the Iliac Arteries, Barney, J. A., M.D., and Williams, G. R., M.D. (S) 492
It's the Voter's Choice (E) 402

—J—

Jacobs, Cecil F., M.D. (Pic) 469
Jaques, William E., M.D., Heart Page 487
Johnson, Hollis E., M.D., (Pic) 149
Johnson, Mark, R., M.D. (Pic) 144
Junker, John (Pic) 394

—K—

Keele, Doman K., M.D., Problems in the Diagnosis and Treatment of Hypothyroidism in Children (S) 112
Kent, Bartis M., M.D., and McGraw, Willard L., M.D., Myotonica Dystrophia (S) 237
Keratinization: A Review, Smith, Edward, M.D., and Everett, Mark Allen, M.D. (S) 459
Kerr-Mills Program Expansion Approved by House of Delegates (GN) 429
Kerr, Senator Robert S. (Pic) 171
Kenyon, Rex E., M.D. (Pic) 145
Kernodle, Stratton E., M.D. (D) 70
Kerr Kills Medicare in Senate (GN) 346
Kershner, Howard E., L.H.D. (Pic) 149
Kierland, Robert, M.D. (Pic) 33
Kierland, Robert R., M.D. (Pic) 149

Kyriacopoulos, John, M.D., and Smith, William O., M.D., Intravenous Hypertonic Urea As A Diuretic Agent (S) 210
Kyriakopoulos, Adrian A., M.D., Hammarsten, James F., M.D., and Smith, William L., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248

—L—

Lain, Everett S., M.D. (Pic) 256
Land, Richard E., M.D. (Pic) 469
Langdon, Ira Daniel, M.D. (Pic) 469
The Last Word Jan. lvii, Feb. liv, March lii, April xliv, May xlviii, June, xliv, July xlvi, Aug. xlii, Sept. liv, Oct. lii, Nov. lxiv, Dec. lii
The Last Word Dec. lii
Lee, Robert E., LL.B. (Pic) 149
Lester, Frankie (Pic) 171
Letter (GN) 348
Letter (GN) 434
Letter (GN) 472
Letter to the Editor (GN) 294
Letter to the Editor (GN) 38
Letters to the Editor (GN) 107
Levy, Bertha, M.D., Dr. Mary Walker (BR) 399
Lewis, Wilbert F., M.D. 36
Lindeman, Robert D., M.D., Bloss, Claude M., M.D., Brown, Forest R., M.D., and Moseley, Kirk T., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris, Robbins, Galen P., M.D. (S) 51
Long Term Anticoagulant Therapy in Myocardial Infarction, Conrad, Loyal L., M.D. (S) 49
Long Term Oral Anticoagulants in Myocardial Infarction, McCollum, W. T., M.D., F.A.C.P. (S) 46
Lupas, John A., M.D., Severe Drug Reaction with Bone Marrow Depression Due to Mesantoin (S) 409
Lusk, Earl M., M.D. (Pic) 226
Lynn, Thomas N., M.D., Heart Page 246
Lynn, Thomas N., Jr., M.D., The Cases for and Against Anticoagulants in Coronary Heart Disease (S) 39
Lynn, Thomas N., M.D., Electrocardiographic Abnormalities in Congenital Heart Disease; QRS and T (S) 130
Lytle, Roy C., LL.B. (Pic) 149

—M—

MacDonald, John E., M.D. (Pic) 256
MacKercher, Mrs. Peter A. (Pic) 171
McCarley, T. H., M.D. (Pic) 256
McCollum, W. T., M.D., F.A.C.P., Long Term Oral Anticoagulants in Myocardial Infarction (S) 46
McCormack, L. J., M.D. (Pic) 149
McGill, Ralph A., M.D. (Pic) 256
McGlanery, Muriel E. (Pic) 394
McGraw, Willard L., M.D., and Kent, Bartis M., M.D., Myotonica Dystrophia (S) 237
McIntyre, Ray V., M.D., Financing Medical Care (BR) 399
McKeel, Sam A., M.D. (Pic) 256
McQuire, H. Thomas, M.D. (Pic) 350
Magnesium Depletion Induced by Various Diuretics, Smith, William L., M.D., Kyriakopoulos, Adrian A., M.D., and Hammarsten, James F., M.D. 248
Maguire, Philip J., M.D., Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy (S) 123
Malek, Hadi, M.D. and Chaitin, Horace, Congenital Diaphragmatic Hernia (S) 28
Management of Traumatic Amputations, O'Donoghue, Don, M.D., Williams, G. Rainey, M.D., Frank, Gael R., M.D., and Snyder, David D., M.D. (S) 419
Mankin, Haven, M.D., Cervical Angiography (S) 360
Mannerberg, Frederick D., M.D., Brandt, Edward N., Jr., M.D., and Shook, M.B., M.D., Cholesterol Pleural Effusion (S) 378
Margo, Mrs. Elias (Pic) 171
Margulis, Mrs. Aaron (Pic) 171
Marsh, H. C., LL.B. (Pic) 149
Martin, Joseph T., M.D. (D) 435
Mass Immunization (E) 401
Mass Sabin Polio Drives Urged in Fall (GN) 396
Massie, Edward, M.D. (Pic) 149
Massion, Walter H., M.D., Goetzinger, B.R., M.D., and Welt, Peter J. L., M.D., Preliminary Observations on Methoxyflurane (S) 202
Mays, James Earnest Jr., M.D., Infantile Diarrhea Due to Enteropathogenic Escherichia Coli (S) 476
The Medical Center Section (E) 110
Medical Grand Rounds, Edited by William E. Hughes, M.D. (S) 336
The Medical Profession and Public Opinion (E) 259
Meet the Presidents (GN) 255
Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach, Albers, Donald D., M.D., and Stephenson, Philip L., M.D. (S) 77
Miller, Jess E., M.D., and Felton, Warren L., II, M.D., Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney (S) 480
Miller, Oscar H., M.D. (D) 502
Miller, William F., M.D. (Pic) 150
Miscellaneous Advertisements (GN) (June) xix
Miscellaneous Advertisements (GN) (April) xlx
Miscellaneous Advertisements (GN) 296
Miscellaneous Advertisements (GN) 38
Miscellaneous Advertisements (GN) 70
Miscellaneous Advertisements (GN) 108
Miscellaenous Advertisements (GN) 227
Miscellaneous Advertisement (GN) 352
Miscellaneous Advertisements (GN) 400
Miscelaneous Advertisements (GN) 436
Miscellaneous Advertisements (GN) 472
Miscellaneous Advertisements (GN) 503
Moersch, M.D. (Pic) 150
Mohler, E. C., M.D. (Pic) 256
Moore, James G., M.D. (Pic) 469
Moore, Samuel T., M.D. (Pic) 36
Morris, Robert, LL.B. (Pic.) 150

Moseley, Kirk T., M.D., Lindeman, Robert D., M.D., Bloss, Claude M., M.D., and Brown, Forest R., M.D., The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program (S) 365
Most Aged Persons Are Well Off (GN) 499
Myotonica Dystrophia, Kent, Bartis M., M.D., and McGraw, Willard L., M.D. (S) 237

MEDICAL CENTER

Abstracts 142, 220, 250, 285, 390, 426, 463, 495
AOA Spring Lecture Held 252
Dean's Message 91, 129, 209, 247, 277, 335, 377, 418, 453, 488
Faculty News 98, 141, 286, 344, 392, 427
Internship Appointments 251
Recent Publications from the Medical Center 285

—N—

Nakano, Jiro, M.D., Cardiovascular Dynamics of Tachycardia (S) 439
Nation's Top Scientists To Take Part in AMA Research Forum (GN) 223
New Loan Fund Created for Medical Students (GN) 395
'New Look' Annual Meeting Successful (GN) 254
'New Look' Annual Meeting Success (GN) 254
Nicholson, Ben H., M.D., and Nicholson, John F., M.D., Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism (S) 234
Nicholson, Ben H., M.D., (Pic) 319
Nicholson, John F., M.D., and Nicholson, Ben H., M.D., Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism (S) 234
Nienhuis, Lester I., M.D., F.A.C.S., Fluid and Electrolyte Balance Clinical Case Analysis (S) 79
Nineteen Sixty Two Legislative Target Year! (E) 1
Nineteen Sixty Two Dues (GN) 37
A "New Look" Annual Meeting (GN) 32
Next Month-Heart Issue (GN) 37
Nonweiler, Edward O., M.D. (Pic) 469
Norfleet, E. K., M.D. (Pic) 69
Norwood, O'Tar, M.D. Cryotherapy: A Review and Evaluation (S) 424

—O—

Ob-Gyn Board Preparatory Course (GN) 431
O'Donoghue, Don, M.D., Williams, G. Rainey, M.D., Frank, Gael R., M.D., and Snyder, David D., M.D., Management of Traumatic Amputations (S) 419
Officers and Trustees (Annual Meeting) (GN) 144
Officers and Trustees of the Oklahoma State Medical Association (GN) 289
Oklahoma City Clinical Society to Meet (GN) 431
The Oklahoma State Department of Health Mobile Unit Chronic Diseases Screening Program, Lindeman, Robert D., M.D., Bloss, Claude M., M.D., Brown, Forest R., M.D., and Moseley, Kirk T., M.D. (S) 365
Oklahoma Medical Political Action Committee—"OMPAC" (GN) 66
Oklahoma's Poison Information Programs (GN) 67
On the Nature of Progress, Chapman, Carleton B., M.D. (S) 278
One Hundred Attend "Self-Help" Conference (GN) 67
OSHA Honors Nine Volunteers (GN) 433
OSHA Will Sponsor Continuing Education (GN) 350
OSMA Launches Intensive Campaign Against H.R. 4222, the King-Anderson Bill (GN) 64
OSMA Sponsors AAPS Essay Contest (GN) 35

—P—

Pamphlets Available from OSMA Office (GN) 350
Pamphlets Available From OSMA Office (GN) 399
Past-Presidents Honored at Annual Breakfast (GN) 255
Pathology (B R) 226
Pediatric Colloquy To Be Held in Tulsa (GN) 432
The People (E) 229
Persistent Patent Ductus Arteriosus in An Adult—A Case Report, Hackney, John L., M.D. (S) 327
Phelps, Malcom E., M.D., (Pic) 350
Physical Scientists To Join Medical Scientists in Research Problems (GN) 105
Physicians and Selective Service (GN) 224
Pierce, Alexander W. Jr., M.D., Review: The Nephrotic Syndrome in Childhood with Special Reference to Management (S) 454
Poliomyelitis Vaccines (E) 1
The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery, Gosser, Robert L., M.D., Cayler, Glen G., M.D., Williams, G. Rainey, M.D., and Campbell, Gilbert S., M.D. (S) 272
Practical Applications for Postgraduate Education (E) 74
Preliminary Observations on Methoxyflurane Anesthesia, Goetzinger, B. R., M.D., Welt, Peter J. L., M.D., and Massion, Walter H., M.D., (S) 202
President's Page (E) 3
President's Page (E) 76
President's Page (E) 111
President's Page (E) 187
President's Page (E) 232
President's Page (E) 262
President's Page (E) 323
President's Page (E) 354
President's Page (E) 403
President's Page (E) 438
President's Page (E) 475
Primary Lymphoma of the Lung, Felton, Warren L., II, M.D. and Russell, Henry T., M.D. (S) 263
Problems in the Diagnosis and Treatment of Hypothyroidism in Children, Keele, Doman K., M.D. (S)) 112
Proctor, James T., M.D. (Pic) 469

Programs Offered on Perinatal Mortality (GN) 397
A Proposal For Socialized Groceries (E) 320
Proceedings of the 56th Annual Session of the House of Delegates of the Oklahoma State Medical Association (GN) 293
Professional Education Through Television At Home (GN) 62
Program (Annual Meeting) (GN) 151
Prostatic Surgery Mortality Related to Hemorrhage, Branham, Donald W., M.D., and Emmott, Ralph C., M.D. (S) 119
Pruitt, Francis W., M.D., F.A.C.P., Heart Page 31
Put It In Writing (GN) 100
Pyeatte, Jesse E., M.D. (Pic) 469
Pyeatte, Joella C., M.D. (Pic) 469

—R—

Radiologists Oppose Aged Plan (GN) 225
Regional and Community Planning for Health Facilities, Snelson, Paul A. (S) 240
Regional Postgraduate Courses Announced (GN) 501
Regional Postgraduate Courses Continue to be Popular, Ada Next (GN) 68
Regional Postgraduate Courses Are Popularly Received (GN) 37
A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries, Hayes, Harrison, M.D., Rothenberger, Monty, M.D., Boland, John L., Ph.D., and George, E.M., M.A., M.D. (S) 384
Related Meetings (Annual Meeting) (GN) 156
Report on a Case of Macroglobulinemia and Cryoglobulinemia, Cook, Charles E., Jr., M.D. (S) 412
Representation? A Note to Those Not Present (E) 473
A Review: Chorea, A Symptom Complex, Simon, Jimmy L., M.D. (S) 19
Review: The Nephrotic Syndrome in Childhood with Special References to Management, Pierce, Alexander W., Jr., M.D. (S) 454
Ribicoff Names Carlock As Advisor on Aging (GN) 66
Richardson, Sylvia O., M.D., and Riley, Harris D., Jr., M.D., Comprehensive Management of Mental Retardation: Description of One Approach to the Problem (S) 267
Rigual, Rafael, M.D., and Cummings, Richard, M.D., Intratemporal Facial Nerve Palsy (S) 4
Riley, Harris D., Jr., M.D., and Richardson, Sylvia O., M.D., Comprehensive Management of Mental Retardation: Description of One Approach to the Problem (S) 267
Riley, Harris D., Jr., M.D., and Deardorff, Max, M.D., Salmonella Meningitis (S) 10
Riley, Harris D., Jr., M.D., et al., Cystic Fibrosis of the Pancreas (S) 191
Ritan, John L., M.D., Carcinoma of the Maxillary Antrum (S) 23
Ritzhaupt, Lewis H., M.D. (Pic) 256
Robards, Victor L., Jr., M.D., Traumatic Arteriovenous Fistula of Thirty-seven Years Duration (S) 324
Robbins, Galen P., M.D., Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris (S) 51
The Role of Blue Cross in Financing Hospital Care of Older Persons (E) 109
Rothenberger, Monty, M.D., Boland, John L., Ph.D., George, W. M., M.A., M.D., and Hayes, Harrison, M.D., A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries (S) 384
Rucks, W. W., Jr., M.D., The Case Against the Use of Anticoagulation in Angina Pectoris (S) 55
Russell, Henry T., M.D., and Felton, Warren L., II, M.D., Primary Lymphoma of the Lung (S) 263
Russo, Peter E., M.D. (Pic) 255

—S—

Salmonella Meningitis, Riley, Harris D., Jr., M.D. and Deardorff, Max, M.D. (S) 10
Schottstaedt, William W., M.D., Brandt, Edward N., Jr., M.D., and Hagans, James A., M.D., Ph.D., The Computer As A Diagnostic Aid in Medicine (S) 213
Schottstaedt, William W., M.D., and Hagans, James A., M.D., Ph.D., The Biostatistical Unit of the Department of Preventive Medicine and Public Health (S) 218
Schottstaedt, William W., M.D., and Hagans, James A., M.D., Ph.D., Computers in Modern Medicine (S) 96
Schottstaedt, William W., M.D., Heart Page 208
Shook, M. B., M.D., Mannerberg, Frederick D., M.D., and Brandt, Edward N., Jr., M.D., Cholesterol Pleural Effusion (S) 378
Schuhmacher, John F. (Pic) 394
Seat Belts Save Lives (GN) 430
Severe Drug Reaction with Bone Marrow Depression Due to Mesantoin, Lupas, John A., M.D. (S) 409
Simon, Jimmy L., M.D., A Review: Chorea, A Symptom Complex (S) 19
Smith, Edward, M.D., and Everett, Mark Allen, M.D., Keratinization: A Review (S) 459
Smith, Mrs. Delbert G. (Pic) 171
Smith, William H., II (Pic) 394
Smith, William O., M.D., and Kyriacopoulos, John, M.D., Intravenous Hypertonic Urea As A Diuretic Agent (S) 210
Smith, William O., M.D., Kyriakopoulos, Adrian A., M.D., and Hammarsten, James F., M.D., Magnesium Depletion Induced by Various Diuretics (S) 248
Snelson, Paul A., Regional and Community Planning for Health Facilities (S) 240
Social Security Opposed by State Physicians (GN) 500
Social Security Showdown (GN) 222
Sparks, Mrs. Tom C. (Pic) 171
Speed, Henry K., M.D. (Pic) 256
Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy, Maguire, Philip J., M.D. (S) 123
Stacy, J. R., M.D. (Pic) 145
Stanbro, Gregory E., M.D. (D) 435
Standing Committees (GN) 290
A Standing Ovation for Doctor Ben Nicholson (E) 319
State GP's To Meet in February (GN) 501

State M.D.'s Oppose Compulsory Social Security Coverage (GN) 431
State Represented at AMA Institute (GN) 398
Stephenson, Philip L., M.D., and Albers, Donald D., M.D., Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach (S) 77
Stephenson, Philip L., M.D., and Brandt, Edward N., Jr., M.D., Tuberculosis of the Liver (S) 92
Stroud, Malcolm H., M.D. (Pic) 150
Sugg, Alfred R., M.D. (D) 70
Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney, Felton, Warren L., II, M.D., and Miller, Jess E., M.D. (S) 480
Surgical Treatment of Several Diseases of the Thyroid, Craighead, Claude C., M.D. (S) 355

SCIENTIFIC ARTICLES

Allergic Reactions to Low Environmental Temperature, "Cold Allergy," Horowitz, Leon M.D. 82
Applanation Tonometry, Garnier, William H., M.D. 421
The Biostatistical Unit of the Department of Preventive Medicine and Public Health, Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D. 218
A Brief Critique, Freed, Leon C., M.D. 63
Cardiovascular Dynamics of Tachycardia, Nakano, Jiro, M.D. 439
The Case Against Anticoagulation in Coronary Insufficiency, Ewing, William F., M.D. 61
The Case Against the Use of Anticoagulation in Angina Pectoris, Rucks, W. W., Jr., M.D. 55
The Case Against Using Anticoagulants Following Acute Myocardial Infarction, Ralston R. Hannas, M.D. 43
The Case For Using Anticoagulants Following Acute Myocardial Infarction, Honick, Gerald L., M.D. 40
The Cases for and Against Anticoagulants in Coronary Heart Disease, Lynn, Thomas N., Jr., M.D. 39
Carcinoma of the Maxillary Antrum, Ritan, John L., M.D. 23
Cervical Angiography, Mankin, Haven, M.D. 360
Cholesterol Pleural Effusion, Mannerberg, Frederick D., M.D., Brandt, Edward N., Jr., M.D., and Shook, M. B., M.D. 373
Comprehensive Management of Mental Retardation: Description of One Approach to the Problem, Richardson, Sylvia O., M.D., and Riley, Harris D., Jr., M.D. 267
The Computer As A Diagnostic Aid in Medicine, Brandt, Edward N., Jr., M.D., Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D. 213
Computers in Modern Medicine, Hagans, James A., M.D., Ph.D., and Schottstaedt, William W., M.D. 96
Congenital Diaphragmatic Hernia, Malek, Hadi, M.D. and Chaitin, Horace, M.D. 28
Cryotherapy: A Review and Evaluation, Norwood, O'Tar, M.D. 424
Cystic Fibrosis of the Pancreas, Riley, Harris D., Jr., M.D., et al. 191
Ectopic Ureteral Orifice, A Case Report, Dawson, C. B., M.D., and Emmott, Ralph C., M.D. 188
Electrocardiographic Abnormalities in Congenital Heart Disease; QRS and T, Lynn, Thomas N., M.D. 130
Fiber Optics, Forester, Virgil Ray, M.D. 87
Fluid and Electrolyte Balance Clinical Case Analysis, Nienhuis, Lester I., M.D., F.A.C.S. 79
Heart Page, Zuhdi, Nazih, M.D., Carey, John M., M.D., and Greer, Allen E., M.D. 90
Hemolytic Anemia From Brown Spider Bite—Necrotic Arachnidism, Nicholson, John F., M.D., and Nicholson, Ben H., M.D. 234
A Histochemical Study of Vitiligo, Garner, James, and Everett, Mark Allen, M.D. 489
Hydrops of the Gallbladder in a Three-Year-Old Girl, Bobek, D. W., M.D. 125
Infantile Diarrhea Due to Enteropathogenic Escherichia Coli, Mays, James Earnest Jr., M.D. 476
Intratemporal Facial Nerve Palsy, Rigual, Rafael, M.D., and Cummings, Richard, M.D. 4
Intravenous Hypertonic Urea As A Diuretic Agent, Smith, William O., M.D., and Kyriacopoulos, John, M.D. 210
Isolated Aneurysms of the Iliac Arteries, Barney, J. A., M.D., and Williams, G. R., M.D. 492
Keratinization: A Review, Smith, Edward, M.D., and Everett, Mark Allen, M.D. 459
Long Term Anticoagulant Therapy in Arteriosclerotic Cardiovascular Disease Manifest by Angina Pectoris, Robbins, Galen P., M.D. 51
Long Term Anticoagulant Therapy in Myocardial Infarction, Conrad, Loyal L., M.D. 49
Long Term Oral Anticoagulants in Myocardial Infarction, McCollum, W. T., M.D., F.A.C.P. 46
Magnesium Depletion Induced by Various Diuretics, Smith, William O., M.D., Kyriakopoulos, Adrian A., M.D., and Hammarsten, James F., M.D. 248
The Management of Traumatic Amputations, O'Donoghue, Don, M.D., Williams, G. Rainey, M.D., Frank, Gael R., M.D., and Snyder, David D., M.D. 419
Medical Grand Rounds, Edited by William E. Hughes, M.D. 336
Metastastic Carcinoma of the Prostate From a Silent Carcinoma of the Stomach, Albers, Donald D., M.D., and Stephenson, Philip L., M.D. 77
Myotonica Dystrophia, Kent, Bartis M., M.D., and McGraw, Willard L., M.D. 237
The Oklahoma State Department of Health Mobile Unit Chronic Disease Screening Program, Lindeman, Robert D., M.D., Bloss, Claude M., M.D., Brown, Forest R., M.D., and Moseley, Kirk T., M.D. 365
On the Nature of Progress, Chapman, Carleton B., M.D. 278

Persistent Patent Ductus Arteriosus in An Adult —A Case Report, Hackney, John L., M.D. 327
The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery, Gosser, Robert L., M.D., Cayler, Glen G., M.D., Williams, G. Rainey, M.D., and Campbell, Gilbert S., M.D. 272
Preliminary Observations on Methoxyflurane Anesthesia, Goetzinger, B. R., M.D., Welt, Peter J. L., M.D., and Massion, Walter H., M.D. 202
Primary Lymphoma of the Lung, Felton, Warren L., II, M.D., and Russell, Henry T., M.D. 263
Problems in the Diagnosis and Treatment of Hypothyroidism in Children, Keele, Doman K., M.D. 112
Prostatic Surgery Mortality Related to Hemorrhage, Branham, Donald W., M.D., and Emmott, Ralph C., M.D. 119
Regional and Community Planning for Health Facilities, Snelson, Paul A. 240
A Rehabilitation Study: Cerebral Vascular Accidents and Traumatic Head Injuries, Hayes, Harrison, M.D., Rothenberger, Monty, M.D., Boland, John L., Ph.D., and George, E. M., M.A., M.D. 384
Report on a Case of Macroglobulinemia and Cryoglobulinemia, Cook, Charles E., Jr., M.D. 412
A Review: Chorea, A Symptom Complex, Simon, Jimmy L., M.D. 19
Review: The Nephrotic Syndrome in Childhood with Special Reference to Management, Pierce, Alexander W., Jr., M.D. 454
Salmonella Meningitis, Riley, Harris D., Jr., M.D. and Deardorff, Max, M.D. 10
Severe Drug Reaction with Bone Marrow Depression Due to Mesantoin, Lupas, John A., M.D. 409
Spontaneous Rupture of Utero-Ovarian Vessels During Pregnancy, Maguire, Philip J., M.D. 123
Surgical Resection of Abdominal Aortic Aneurysm Associated with Horseshoe Kidney, Felton, Warren L., II, M.D., and Miller, Jess E., M.D. 480
Surgical Treatment of Several Diseases of the Thyroid, Craighead, Claude C., M.D. 355
Traumatic Arteriovenous Fistula of Thirty-seven Years Duration, Robards, Victor L., Jr., M.D. 324
Tuberculosis of the Liver, Brandt, Edward N., Jr., M.D., and Stephenson, Philip L., M.D. 92
Tuberous Sclerosis: Report of a Case With Brief Review of the Literature, Franken, E. A., Jr., M.D. 330
Tympanoplasty by Free Vein Graft, A Preliminary Report of Sixty Cases, Walker, Ethan A., Jr., M.D., F.A.C.S. 404
The Use of Anticoagulants in Impending Myocardial Infarction, Donnell, John J., M.D. 58
Use of a Liquid Meal in a Football Training Program, Cooper, Donald L., M.D., Bird, Byron and Blair, Joseph 484

—T—

Thompson, Charles L. (Pic) 150
Thompson, Stephen W., M.D., Heart Page 128
Three Group Insurance Plans for OSMA Members (GN) 396
Traumatic Arteriovenous Fistula of Thirty-seven Years Duration, Robards, Victor L., Jr., M.D. (S) 324
The Truth, Freed, Leon C., M.D. 139
Tuberculosis of the Liver, Brandt, Edward N., Jr., M.D., and Stephenson, Philip L., M.D. (S) 92
Tuberous Sclerosis: Report of A Case With Brief Review of the Literature, Franken, E. A., Jr., M.D. (S) 330
Tulsa County Honors New and Senior Members (GN) 469
Tulsa Surgeon Honored (GN) 226
Turner, Henry H., M.D. (Pic) 256
Two Oklahoma Physicians Honored (GN) 69

—U—

The Use of Anticoagulants in Impending Myocardial Infarction, Donnell, John J., M.D. (S) 58
Use of a Liquid Meal in a Football Training Program, Cooper, Donald L., M.D., Bird, Byron and Blair, Joseph (S) 484

—W—

Wainwright, Tom L., M.D. (D) 435
Walker, Ethan A., Jr., M.D., F.A.C.S., Tympanoplasty by Free Vein Graft, A Preliminary Report of Sixty Cases (S) 404
We Resolve (GN) 348
Welt, Peter J. L., M.D., Massion, Walter H., M.D., and Goetzinger, B. R., M.D., Preliminary Observations on Methoxyflurane (S) 202
Whelan, Dwight F. (Pic) 349
White, Mrs. J. Hutchings (Pic) 171
Who Can Tell? (E) 373
Williams, G. R., M.D., and Barney, J. A., M.D., Isolated Aneurysms of the Iliac Arteries (S) 492
Williams, G. Rainey, M.D., Campbell, Gilbert S., M.D., Gosser, Robert L., M.D., and Cayler, Glen G., M.D., The Postpericardiotomy Syndrome and Other Major Complications of Open Heart Surgery (S) 272
Williams, G. Rainey, M.D., Frank, Gael R., M.D., Snyder, David D., M.D., and O'Donoghue, Don, M.D., Management of Traumatic Amputations (S) 419
Wise, William L., LL.B. (Pic) 150
Woman's Auxiliary (Annual Meeting) (GN) 171

—Z—

Zuhdi, Nazih, M.D., Heart Page 90

OFFICERS and TRUSTEES
of the
OKLAHOMA STATE MEDICAL ASSOCIATION

President—J. Hoyle Carlock, M.D., Ardmore

President-Elect—Peter E. Russo, M.D., Oklahoma City

Vice-President—Frances P. Newlin, M.D., Shawnee

Secretary-Treasurer—Mark R. Johnson, M.D., Oklahoma City

Past-President—Walter E. Brown, M.D., Tulsa

Past-President—Clinton Gallaher, M.D., Shawnee

Delegate to the A.M.A.—Wilkie D. Hoover, M.D., Tulsa

Alternate Delegate to the A.M.A.—Joe L. Duer, M.D., Woodward

Delegate to the A.M.A.—Malcom E. Phelps, M.D., El Reno

Alternate Delegate to the A.M.A.—Thomas C. Points, M.D., Oklahoma City

Speaker of the House of Delegates—Marshall O. Hart, M.D., Tulsa

Vice-Speaker—C. M. Hodgson, M.D., Kingfisher

Editor-in-Chief Journal—C. B. Dawson, M.D., Oklahoma City

TRUSTEES

DISTRICT #1

Wylie G. Chesnut, M.D.
Miami
L. B. Word, M.D.
Bartlesville

DISTRICT #2

A. M. Evans, M.D.
Perry
G. B. Gathers, Jr., M.D.
Stillwater

DISTRICT #3

James Petty, M.D.
Guthrie
Avery B. Wight, M.D.
Enid

DISTRICT #4

Walter H. Dersch, Jr., M.D.
Shattuck
John X. Blender, M.D.
Cherokee

DISTRICT #5

Ross Deputy, M.D.
Clinton
C. Riley, Strong, M.D.
El Reno

DISTRICT #6

Vernon D. Cushing, M.D.
Oklahoma City
E. E. Shircliff, M.D.
Oklahoma City

DISTRICT #7

Jerold D. Kethley, M.D.
Shawnee
E. K. Norfleet, M.D.
Bristow

DISTRICT #8

Wendell L. Smith, M.D.
Tulsa
Earl M. Lusk, M.D.
Tulsa

DISTRICT #9

Francis R. First, M.D.
Checotah
Burdge F. Green, M.D.
Stilwell

DISTRICT #10

Thurman Shuller, M.D.
McAlester
C. E. Lively, M.D.
McAlester

DISTRICT #11

Thomas E. Rhea, M.D.
Idabel
W. A. Hyde, M.D.
Durant

DISTRICT #12

Ennis M. Gullatt, M.D.
Ada
M. E. Robberson, M.D.
Wynnewood

DISTRICT #13

J. T. Hicks, M.D.
Lawton
W. R. Cheatwood, M.D.
Duncan

DISTRICT #14

J. B. Hollis, M.D.
Mangum
R. R. Hannas, M.D.
Sentinel

The Wheel of Fortune, kept spinning since our new officers and chairmen assumed their duties last spring, gained momentum and provided the theme for Fall Conference. Mrs. Milton L. Berg, President, introduced our special guest speakers, J. Raymond Stacy, M.D., President of the Oklahoma County Medical Society, and Mr. Don Blair, Executive Secretary of our State Association.

Doctor Stacy explained the important role of AMPAC and OMPAC, tracing their origin and their importance to us at the present time. Mr. Blair presented the scope of the activities covered by our State Medical organization, the extent of its public relations and projects.

Mrs. Tom C. Sparks, President-Elect, reported on National Fall Conference. County Presidents and State Chairmen then announced their plans for the year and reported the progress of these plans at the present time.

Guests at the meeting included Mrs. Elias Margo, President-Elect, Woman's Auxiliary to the Southern Medical Association; Mrs. Virgil Ray Forester, Director, Woman's Auxiliary to the American Medical Association, and Councilor to Southern; and Mrs. Peter Russo, wife of the President-Elect, Oklahoma State Medical Association.

Following the business meeting, the conference adjourned to the Ramada Inn for luncheon and a style show. Auxiliary members attending wish to thank Mrs. Joe M. Parker and the members of the Hospitality Committee, and Mrs. Dick H. Huff and the members of her committee for the beautiful ceramic favors and decorations. Details of the meeting and of the Oklahoma City Clinical Conference luncheon and style show will be completely covered in the *Sooner Physician's Wife*.

Since the beginning of our Health Careers program (formerly Nurse Recruitment), we have often mentioned its activities and its importance. Closely allied, and admittedly neglected on this page, is our Loan Fund. Many of our newer members and members-at-large, possibly even some of our old-timers, are not fully aware of its efficient organization and function. We asked Mrs. John Powers Wolff, Chairman, to explain its operation for us:

"The Loan Fund Committee is composed of the five immediate past Presidents of the Auxiliary. (The fifth year out of office automatically places one as Chairman). In addition, the President, President-Elect, Treasurer, Treasurer-Elect, and an Administrative Secretary serve as ex-officio members. Mrs. Lewis Carroll Taylor has served in the latter capacity for a number of years. The Loan Fund is necessarily covered by a separate set of by-laws, never in conflict with Auxiliary by-laws, insuring smoothness and continuity of operation.

"Funds for the committee are obtained from budgeted and private donations from our county Auxiliaries. The Auxiliary, through its Loan Fund, makes loans to girls who wish to make nursing their career. They must have been accepted at an accredited hospital in Oklahoma and be recommended by the Director of Nursing. No approved application has ever been rejected. We grant the loan, payable in three years after graduation; two per cent interest is charged after graduation.

"During the past two years we have granted 31 loans, amounting to $5,754.50. We now have a total of less than $2,000 in our checking and saving accounts. Since student nurses are now required to pay board and room, it is obvious that we do need help. Please continue your regular donations, encourage your members to make contributions—and if you have funds left in your treasury at the end of the year, please consider our Loan Fund!"

While we are in the midst of holiday activities, these lines from Poe seem particularly fitting for our Auxiliary families:

"Reason's whole pleasure, all the joys of sense,
Lie in three words—health, peace and competence."

Merry Christmas and a Joyous New Year! □

OSMA JOURNAL / *the last word*

Professional Liability insurance rates are threatened. The OSMA sponsored professional liability insurance program with the St. Paul Fire and Marine Insurance Company is in trouble, according to company representatives. Despite a slightly improving loss ratio, company officials are negotiating with Doctor Dave Lhevine's professional liability committee for a possible hike in rates, based upon the last few years' experience. Committee wants to wait and see how the favorable trend progresses before making a final decision.

Governor Bellmon has been asked to maintain the present level of the Kerr-Mills program in Oklahoma. With rumors flying about the governor-elect's intentions to curtail state spending, the Professional Advisory Committee of the Department of Public Welfare instructed the department director to inform Mr. Bellmon of its desire to leave the medical, hospital and nursing home benefits undisturbed.

The February Journal of the Oklahoma State Medical Association will be completely devoted to the subject of Hypertension, under the direction of contributing editor Thomas N. Lynn, M.D. Also planned . . . a special issue on safety for next May.

When asked "Is there a doctor in the house?", Massachusetts physicians take different views as to whether to step forward. In a recent Boston University poll, 16 per cent of the physicians said they would not volunteer, 27 per cent said they would, 41 per cent said they would if no one else came forth, and 2 per cent didn't want to answer the question. In Oklahoma, as in seven other states, physicians are protected from civil liability resulting from "good samaritan" care rendered at the site of an emergency.

Atoka-Bryan-Coal District Medical Society, for the second straight year, hosted the premedical students of Southeastern State College on October 23rd. Principal speaker was Philip Smith, Sc. D., Associate Dean of Student Affairs, O. U. Medical School.

Blue Cross-Blue Shield revised its bylaws on October 19th, providing new titles for top officers and directors of the plans. N. D. Helland, formerly Executive Director, is now President; W. R. Bethel is now Vice-President; Ben H. Nicholson, M.D., is Vice-Chairman of the Blue Cross Board; and, John F. Burton, M.D., is Vice-Chairman of the Blue Shield Board.

AMA antagonist Doctor Warren F. Draper, Medical Director of the United Mineworkers Welfare Fund, is seeing his socialized medical care empire crumble. In 1956, the union imported salaried doctors and established a chain of ten hospitals in Kentucky, West Virginia and Virginia to provide health care to miners and families, paid for with compulsory royalties from mining companies. Now royalties have dropped in proportion to decreasing mining operations, and the union is being forced to sell four hospitals to communities as well as curtail health care benefits in the remainder. Six years ago, the experiment was termed "a bright new hope."

Reports are coming out of Europe alleging Preludin (Geigy) and Postafen (Pfizer), among other weight reducing, seasickness and pregnancy medicines, are linked with birth deformities. FDA is investigating, but has found no evidence supporting the claims made recently in the British Medical Journal.

Doctor's son opens office. Wallace N. Davidson, Jr., M.D., son of W. M. Davidson, M.D., Cushing, has opened offices in Dayton, Ohio. He graduated from the University of Oklahoma School of Medicine in 1952. After two years with the air force in Japan, he completed his work in dermatology at Wright-Patterson Air Force Base in Dayton.

MEETINGS

January 9	Postgraduate Course, O. U. Medical School, "Psychiatry in Practice"
February 4-5	Oklahoma Chapter, AAGP, Sherator-Oklahoma Hotel, Oklahoma City
May 3-5	OSMA Annual Meeting, Mayo Hotel, Tulsa
June 16-20	AMA Annual Meeting, Atlantic City

92

D

X63-2992

Oklahoma state medical association.
Journal.
v.55, 1962.

DATE	ISSUED TO
	Dol H.

X63-2992

Oklahoma state medical association. Journal.
v.55, 1962.

RETURN THIS BOOK ON OR BEFORE LAST DATE STAMPED

APR 20 '64			
AUG 28 '64			
MAR 4 '65			
AUG 8 '6[illegible]			
MAY 11 '70	XEROX		